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ABSTRACT

This document presents an evaluation of the year-round operations (YRO) at the University of California and the California State Colleges. A comparison of YRO and YRO alternatives and the success of conversion planning led to four basic conclusions and recommendations: (1) The concept of YRO is sound and can result in significant total cost savings; however, the advantages of conversion to YRO can be great, or nonexistant, on an individual campus. These differences prevent the overall conclusion from being applied to every campus and college. The decision to offer YRO must be a local one, based on the economics of the individual campus. (2) The decision to offer summer quarter at a particular campus or college must be based on a complete investment analysis. This will highlight the cost advantages of YRO at that campus or college. (3) Each college or campus that is to convert to the quarter system, and then initiate YRO, should follow the conversion planning schedule presented in this report. (4) Because the score and breadth of summer quarter course offerings have a profound effect on cost/full-time equivalent students, it is recommended that each college and campus study the effect of reducing the scope and breadth of the summer quarter course. (MJM)

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EVALUATION OF YEAR-ROUND OPERATIONS AT THE UNIVERSITY OF CALIFORNIA AND THE CALIFORNIA STATE COLLEGES

A Report Prepared for the
Coordinating Council for Higher Education
By Touche, Ross, Bailey and Smart

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HE 006 253

September, 1968

TOUCHE, ROSS, BAILEY & SMART

ONE MARITIME PLAZA
SAN FRANCISCO, CALIFORNIA 94111

September 23, 1968

State of California
Coordinating Council for
Higher Education
1020 Twelfth Street
Sacramento, California 95814

Gentlemen:

Enclosed is the final report on our evaluation of Year-round Operations at the University of California and the California State Colleges.

The report is composed of two parts, with the first serving as an introduction and general summary of results. The three sections of the second part answer the three basic questions of the engagement, and serve as support for the general summary.

We would like to thank the Council staff, and also the staffs of the Department of Finance, the Legislative Analyst, the University of California, and the California State Colleges for the cooperation and courtesy extended to our personnel during this engagement.

Very truly yours,

Touche, Ross, Bailey & Smart

TABLE OF CONTENTS

Section		Page
	Glossary of Terms	i
	Summary	iii
I.	Testing of the Assumptions	1
	Assumptions Concerning Enrollment	2
	Assumptions Concerning Educational Policies	11
	Assumptions Concerning Cost	17
II.	Cost Comparison of YRO and Non-YRO Alternatives	40
	Framework of the Analysis of YRO	41
	The University of California, Comparison of YRO and Non-YRO Alternatives	45
	The California State Colleges, Comparison of YRO and Non-YRO Alternatives	49
	Method of Selecting Campuses and Colleges for Conversion to YRO	53
III.	Conversion Planning	55
	Conversion Policies	56
	Recommended Conversion Planning Schedule	58
	Conversion Experience at the University of California, Berkeley	62
	Conversion Experience at the University of California, Los Angeles	64
	Conversion Experience at California State College at Los Angeles	66
	Conversion Cost Experience	69

TABLE OF CONTENTS (Continued)

Exhibits		Referred to In Text on Page
I.	Analysis of Enrollment Data.....	6
II.	Analysis of Acceleration, Spread, Shift....	8
III.	Major Operating Costs at State Colleges....	20
IV.	Cost Comparison Between Summer Quarter and Academic Year Quarter.....	21
V.	Analysis of Cycling Costs.....	22
VI.	Comparison of Support Budgets.....	23
VII.	State College Enrollment Projections, 1968-69 -- 1976-77.....	37
VIII.	Enrollment Projections for Los Angeles State, 1968-69 -- 1976-77.....	38
IX.	Total Cost of the Two Alternatives of the Sample Problem.....	44
X.	Cost Comparison of the YRO and Non-YRO Alternatives at the University.....	47
XI.	Cost Comparison of the YRO and Non-YRO Alternatives at the State Colleges.....	51
XII.	Current Schedule of Conversion to Year-Round Operations for State Colleges.....	57
XIII.	Sequence of Operations for Conversion Planning.....	59
XIV.	Conversion Planning Costs.....	69

GLOSSARY OF TERMS

Academic quarter - this is any one of the three quarters that comprise an academic year.

Academic year - refers to the normal nine-month period of teaching from September to June.

Acceleration - the process in which students take more than the normal number of SCH in a calendar year in order to graduate earlier.

Annual FTE student - one annual FTE represents each 45 SCH.

Balanced enrollment - this refers to the condition of equal enrollment in all quarters. In this report, balanced enrollment specifically refers to the condition of having summer quarter enrollment equal to the average academic year enrollment.

Conversion cost - the one-time cost associated with converting a campus or college from the semester system to the quarter system.

Cycling cost - the annual incremental cost associated with operating a campus or college for three quarters rather than two semesters.

Diversion - the process of having lower division students educated at the Junior Colleges so that the University and the State Colleges can maintain a 60:40 ratio of upper division to lower division students.

FTE - full time equivalent. Can refer to a student or faculty member.

FTE student - one FTE student represents each 15 SCH accumulated in a quarter. Only unweighted FTE students are referred to in the text and computations of this report.

Redirection - the process of shifting students to another campus within the same segment.

SCH - student credit hours.

Segment - the University and the State Colleges are the two segments of Higher Education in California.

Shift - the process in which students will attend a summer quarter and then take their vacation in another quarter.

Spread - the process in which students attend four quarters, but reduce their programs in each quarter so that the total SCH in a calendar year is the normal amount.

Summer quarter - the State-supported quarter that is equivalent to an academic quarter.

Summer session - the self-supporting summer term that is approximately six weeks in length.

YRO - year-round operation. This means operating under the quarter system for four equal quarters. In our definition, non-YRO means operating under the semester system with a summer session.

SUMMARY

More than four years have passed since the Council resolution encouraging year-round operation (YRO) for the California State Colleges and the University of California was adopted on February 25, 1964.

At that time the Council recognized the tentative nature of the assumptions on which their resolution was based. The preface to the Council report, "Cost Estimates for Year-Round Operations at the University of California and the California State Colleges", published March 17, 1964 stated this fact:

> "It must be noted that data shown herein are the best estimates possible; however, as there has been no experience upon which to make these estimates, it has been necessary to base these on certain assumptions developed in consultation with representatives of all segments of higher education. Experience can only test these assumptions and prove the extent of accuracy of the estimates."

Now, two campuses of the University and several State Colleges have implemented year-round operations. Other colleges and campuses have developed plans and projected costs for doing so. A significant amount of experience has been acquired which was not available to support the assumptions and conclusions reached in 1964 by the Council.

We evaluated this experience in relation to the assumptions supporting the 1964 resolution and the current practices and plans for year-round operation of the institutions.

The objectives of our study were to:

1. Collect information and analyze experience to date regarding the effect of conversion to year-round operations on enrollment, curriculum, operating costs, and capital costs within each segment.

2. Evaluate the realism of the assumptions supporting the 1964 Council resolution.

3. Develop a framework for comparing by segment the operating and capital costs under YRO with those same costs under the traditional semester system including summer session (Non-YRO).

4. Provide a recommended plan for conversion of colleges and campuses to the quarter system and subsequently to YRO.

SCOPE AND APPROACH

To fulfill the objectives of this study, we spent the majority of our time collecting and screening the large mass of data concerning year-round operations available from diverse sources. We then organized that data into a useful framework for evaluation and decision making.

We collected, assembled and analyzed projections, surveys, budgets and other relevant data supplied to us by the professional staffs of the Council, Department of Finance, Legislative Analyst and the University and State Colleges. Except for a few situations in which discrepancies in reported data appeared to exist, we did not attempt to verify the accuracy of data supplied to us.

In those areas where we believed it necessary to test information, we used samples and interviews. We have described specific testing procedures in the relevant report sections.

SUMMARY OF FINDINGS

As a result of our review and evaluation of year-round operations at the University and the State Colleges, we present the following major conclusions and recommendations.

1. The decision to initiate YRO at the two segments will produce significant savings to the State. Based on projected enrollments for only the first nine years of YRO we estimate that the University will save approximately $85,000,000 through the 1975-76 budget year and will ultimately save approximately $320,000,000 through the 48th year. Enrollment projections for the State Colleges produce an estimated cost saving due to initiation of YRO amounting to $12,000,000 through the 1975-76 budget year with ultimate savings of about $56,000,000.

2. The assumptions supporting the 1964 Coordinating Council resolution are reasonably valid. However, several assumptions should be modified to reflect the need for greater precision or to take into account differing policy decisions at the

University and State Colleges. Also, several assumptions could not be proved or disproved at this time due to insufficient experience.

3. We prepared a two-step conversion plan for those State Colleges still on the semester system. The plan calls for initial conversion to a three quarter system and then to full YRO. This plan emphasizes the academic aspects of conversion to the quarter system and avoids duplication of work already performed, thereby reducing both conversion and cycling costs.

Testing of the Assumptions

The basic assumptions supporting the Coordinating Council's resolution in 1964 are listed in two reports: A Comparison of the Trimester and Four-Quarter Calendars for Year-Round Operation of Public Higher Education in California, CCHE Report 1009, February 1964, and Cost Estimates for Year-Round Operations at the University of California and the California State Colleges, CCHE Report 64-5, March 16, 1964.

There were three general categories of assumptions: assumptions concerning enrollment, assumptions concerning educational policy, and assumptions concerning cost. We collected data, interviewed officials, analyzed and summarized our findings and drew a conclusion regarding the validity of each assumption.

Enrollment Assumptions

We believe the enrollment assumptions for the summer quarter to be basically valid. However, we could find no evidence to prove or disprove them, since there has been insufficient experience with YRO. We found that balanced enrollment, in terms of the summer quarter, has not been achieved by either segment, but the State Colleges appear to be making better progress toward that goal than the University. (See Table I.) Survey results indicate that students at an urban commuting college campus are more receptive to YRO than students at a residential university campus.

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TABLE I

Summary of Exhibit I

Summer Quarter Enrollment as a %
of the Prior Fall Enrollment

	1968	1967
Berkeley	30%	29%
UCLA	27%	Not Offered
Los Angeles State	54%	41%
Hayward	52%	51%

Assumptions Concerning Educational Policy

We found that the assumptions concerning educational policies were valid. Students can begin their education in any quarter and can make a full term's progress in any quarter, including the summer quarter. We also determined that there was a great difference between the segments and between campuses and colleges within segments in the scope and breadth of courses offered in the summer quarter. California State College at Los Angeles (CSCLA) offers a full scope and breadth and California State College at Hayward (CSCH) offers wide scope and breadth; whereas Berkeley and UCLA offer core courses and certain popular electives. Students at CSCLA and CSCH can easily continue in college for consecutive terms in order to accelerate their programs. At Berkeley and UCLA, students can accelerate if they carefully plan their programs in advance.

Cost Assumptions

The assumptions concerning the effect of YRO on operating and capital costs were found to be essentially valid. We determined that on an individual campus or college, and on a segment-wide basis, YRO defers the need for facilities and improves utilization of present facilities. Also, the increased capacity provided by YRO reduces the need for redirection of students to other campuses or colleges and ultimately results in a reduced need for new campuses and colleges within each segment.

In accordance with the Council's assumption, we found that the administrations of both segments treat operating costs as variable with enrollment and length of calendar. However, certain deviations from this basic condition were identified which help to explain the inconsistency of results experienced at the individual campuses and colleges.

General administration, library, and plant operation costs contain a large portion of fixed costs which will be incurred regardless of whether a summer quarter is offered. These fixed costs, having been budgeted for in the normal academic year, are not included in summer quarter budgets.

Cycling costs, which are additional costs required to operate a three-quarter (as opposed to a two-semester) regular academic year, also deviate significantly from the Council's basic assumption.

A third major difference from the Council's interpretation of the variability of cost assumption is caused by the policy of the State Colleges to offer approximate full scope and breadth of courses in the summer quarter. Because full scope and breadth of courses is offered to a substantially reduced enrollment, planned student/faculty ratios for the summer quarter are substantially lower than for the normal academic year. This has resulted in higher summer quarter operating costs per FTE than predicted by the Council.

Cost Comparison of the YRO and Non-YRO Alternatives

We attempted to determine if actual cash savings associated with the YRO decision could be specifically identified, but found that a number of complicating factors prevented this.

Planned capital outlays are based on long-range enrollment projections and, because of the lead time required for construction, the actual available capacity only approximates the required capacity for a particular year. Also, the problem of identifying savings for buildings that were never built, and the difference between approved capital outlay budgets and budget requests, forced us to base our analysis on theoretical savings.

The goal of our analysis was to compute the difference in the total cost of education between the YRO and non-YRO alternatives. To obtain the cost for the non-YRO alternative at a segment, we assumed that nearly all the projected incremental enrollment of the summer quarter would have to be added to the academic year enrollment projections. Therefore, additional facilities would have to be provided for this enrollment in the absence of YRO. Using a predetermined capital outlay requirement per incremental FTE student, we computed the total capital outlay requirement for each year of the decision period. Each year's outlay was represented by a 25-year bond with equal annual retirement at 3-1/2% interest.

The additional costs associated with the YRO alternative were found to be:

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- The increased operating cost of the summer quarter
- The lost revenue of the summer session;
- Cycling costs due to operating for three quarters rather than two semesters; and
- The one-time conversion costs.

With the exception of the conversion costs, we found the additional costs of the summer quarter are incurred each year of summer quarter operation. In order to obtain a comparable analysis, the additional operating costs of the YRO alternative were carried out for the 40-year expected lifetime of the facilities associated with the non-YRO alternatives, for each annual increment of FTE students.

On this basis we computed the cash outlays for each alternative for both the University and the State Colleges. We made critical assumptions as follows in order to complete the computations:

1. The capital outlays per incremental FTE student were assumed to be $13,000 for the University and $6,800 for the State Colleges.

2. We assumed that after eight years, the University will incur summer quarter operating costs that are $100 per annual FTE less than an academic quarter. This is a direct result of the University policy of limiting the scope and breadth of summer quarter courses. We assumed that the State Colleges will continue to incur higher operating costs in the summer quarter, since we assumed they would continue their policy of offering full scope and breadth of courses. However, the higher costs would be reduced in increments from the present $200 per annual FTE student to $50 per annual FTE student after the 20th year.

Using the above assumptions and nine-year enrollment projections for the summer quarter, we found that the total cost of the non-YRO alternative exceeded the total cost of the YRO alternative at the University by $320,381,000 for the 48-year period that represented the lifetime of all the new facilities. The estimated savings through the 1975-76 budget year are about $85,000,000.

Similar computations for the nine-year enrollment projections of the State Colleges show that the cash outlays of the non-YRO alternative exceed those of the YRO alternative by $56,148,000 over the 48-year period. The cumulative savings at the end of the 1975-76 budget year are estimated to be $12,000,000. The

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computations for the University and the State Colleges are shown in Exhibits X and XI, respectively.

We wish to emphasize that although the forecasted results for each alternative have been prepared from the best available estimates, they are based upon numerous assumptions as to future events and therefore cannot, of course, be completely accurate. They should be viewed as an orderly presentation of the result to be expected if the several assumptions are fulfilled. We suggest that these forecasts be reviewed periodically.

Conversion Planning

We prepared a recommended plan for conversion of individual campuses from the semester system to a three-quarter system and then to YRO. To develop this plan, we surveyed the procedures utilized by two campuses and a college which have already converted: Berkeley, UCLA, and California State College at Los Angeles.

We found there were two basic conditions necessary for a successful conversion: Strong and decisive leadership, and faculty involvement. We also found that those campuses which minimized the number of special purpose committees and subcommittees had a smoother conversion experience.

The conversion plan we developed stresses the following points:

1. The conversion to YRO consists of two phases: the conversion to a three-quarter operation and then the addition of a fourth quarter. Conversion planning for the quarter system should begin two years before the initiation of the quarter system. Once quarter system operations have begun, one academic year should be spent planning for the summer quarter.

2. Converting colleges should utilize studies of academic calendars, faculty benefits, teaching loads, etc., that have already been performed.

3. Planning for the first summer quarter should include positive steps for attracting enrollment.

4. General budgeting formulas cannot be applied to all colleges equally. Our conversion plan includes a two-year work load study of the service departments at the larger colleges.

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5. The college records system should be analyzed and revised during conversion in order to reduce the probability of increased cycling costs.

Our conversion planning schedule, shown in Exhibit III, provides a time table and list of steps that we believe will lead to successful conversion to the three-quarter system and, ultimately, to YRO.

RECOMMENDATIONS

Based on our examination and evaluation of the YRO experience at the University and State Colleges, we developed the following conclusions and recommendations:

1. The concept of YRO is sound, and can result in significant total cost savings for both segments. However, there are differences between the segments, and between the campuses and colleges within the segments. In fact, depending on campus or college policy, the advantages of conversion to YRO can be great, or non-existent, on an individual campus. These differences prevent the overall conclusion from being applied to every campus and college.

   The different policies of the State Colleges and the University relating to the scope and breadth of summer quarter course offerings cause a great difference in the relative magnitude of savings achieved through YRO between the segments. The differences between the campuses and colleges relate to the size of the campus or college. The smaller the size, the less likely the campus or college will be able to economically offer the advantages of the summer quarter. Therefore, the decision to offer YRO must be a local one, based on the economies of the individual campus or college.

   Those colleges and University campuses that are not now offering a summer quarter should be analyzed in detail now, to determine the cost benefits of implementing YRO. If cost savings can be demonstrated, planned conversion should be accelerated to the earliest practical date.

2. The decision to offer a summer quarter at a particular campus or college must be based on a complete investment analysis. This will highlight the cost advantages of YRO at that campus or college.

3. Each college or campus that is to convert to the quarter system, and then initiate YRO, should follow the conversion planning schedule we have developed.

4. Because the scope and breadth of summer quarter course offerings has a profound effect on cost/FTE student, we recommend that each college and campus study the effect of reducing the scope and breadth of the summer quarter courses. Specifically, the degree of correlation between scope and breadth of courses and student enrollment should be determined. If the cost of the summer quarter can be reduced without materially affecting enrollment, the financial benefits of YRO become much clearer.

ASSUMPTIONS CONCERNING

ENROLLMENT

SECTION I

TESTING OF THE ASSUMPTIONS

We tested the validity of a number of assumptions that were made by the Coordinating Council before the initiation of year-round operations (YRO) at the University and the State Colleges. These assumptions were presented in two documents: A Comparison of the Trimester and Four-quarter Calendars for Year-round Operation of Public Higher Education in California, CCHE number 1009, February 1964, and Cost Estimates for Year-round Operations at the University of California and the California State Colleges, CCHE number 64-5, March 16, 1964.

The assumptions fall into three general groups: assumptions concerning enrollment, assumptions concerning instructional policy, and assumptions concerning cost. For each assumption we compared the interpretation of the Council staff with those of the Department of Finance, the Legislative Analyst, the State Colleges, and the University. We then collected pertinent data, interviewed responsible officials, analyzed and summarized our findings and came to a conclusion regarding the validity of each assumption.

The following pages of this section show the results of our analysis of each assumption. The general format for each assumption is to show the assumption, followed by our conclusion and then the supporting analysis and exhibits.

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Assumption No. 1

ASSUMPTION:

1. *"Since a program of diverting students to the junior colleges has been accepted by both segments, modified projections reflecting diversion goals should be used as the projected community of students."*

CONCLUSION:

The Department of Finance, which develops the Phase I enrollment projections for the segments, is using a diversion factor in their projections.

ANALYSIS:

The policy of diverting students is delineated in the "Master Plan for Higher Education," paraphrased as follows:

> By 1975, the University and State Colleges will have achieved a ratio of 60:40 upper division students to lower division students.

We verified that the Department of Finance, the Legislative Analyst, the University and the State Colleges agreed that diversion is being accomplished and that the goal of 60:40 will be pursued. We also verified that the Department of Finance is using a diversion factor in its enrollment projections.

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Assumption No. 2

ASSUMPTION:

2. *"Under year-round operation, each segment will serve the same community of students as projected for it under operation for an academic year."*

2A. *"Any increase in enrollment at institutions initiating year-round operation will reduce enrollment elsewhere in the segment."*

2B. *"When an entire segment is operating year-round, it will serve no more students than are projected for it when operating for an academic year."*

CONCLUSION:

There is not enough experience under YRO at either segment to support or negate the assumption. We could find no evidence that the community of students has changed due to YRO. In addition, we could find no evidence that enrollment was shifting from non-YRO campuses to YRO campuses.

Admissions officers at various campuses and colleges supported the Council's interpretations. However, they believed it was premature to attempt to collect evidence since there has not been sufficient experience with YRO. Also, it is premature to determine if an entire segment will serve no more students with YRO than without YRO, since neither segment is entirely operating year-round.

ANALYSIS:

The Council staff has defined community of students for each segment as:

Assumption No. 2 (Continued)

1. State Colleges - a geographical radius of 30 miles from the College, the population of the upper 33% of high school graduates, and the percentage of those eligible who actually attend ("going rate").

2. University - the geographical draw is state-wide, the population of the upper 12-1/2% of high school graduates state-wide, and the percentage of those eligible who actually attend.

Enrollment is defined by the Council staff as the number of students being served. They assume that increased enrollment will occur at a year-round campus or college as students transfer from a non-YRO campus or college in order to avail themselves of the summer quarter.

The Legislative Analyst and the Department of Finance believe that if the community of students at a campus is larger than the students being served, conversion to YRO at that campus will not decrease enrollment elsewhere. San Francisco State College was mentioned as an example of this circumstance. San Francisco State is now at full enrollment and cannot serve its community of students. An increase in enrollment due to YRO will simply permit the College to serve more of its own community of students and cannot be expected to reduce enrollment of other campuses.

Interviews with officials at San Francisco State indicate that in their opinion the unsatisfied demand of that campus is being educated at other institutions in the area. This would indicate that increased enrollment at San Francisco State due to YRO could somewhat reduce enrollment at other institutions.

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Assumption No. 3

ASSUMPTION:

3. *"Student enrollment is roughly the same in all terms."*

Restatement - Enrollment in the summer quarter is roughly the same as the average enrollment of the fall, winter and spring enrollments (average academic year enrollment). This condition is defined to mean balanced enrollment.

CONCLUSION:

There is not sufficient experience to determine whether the colleges or the campuses are making progress toward a truly balanced enrollment, i.e., the summer quarter enrollment equal to the average academic year enrollment.

The present level of enrollment during the summer quarter lies within a range of 30-70% of the average enrollment during the fall, winter and spring quarters (average academic year enrollment) at the campuses and colleges under YRO.

The State Colleges have made better progress toward balanced enrollment than have the University campuses.

Because of differences in student body mix and enrollment among the Colleges and the University campuses we were unable (within the budget of this job) to determine whether the relative success of the colleges was due to better policies.

ANALYSIS:

The Council staff believes the attainment of balanced enrollment is an evolutionary process.

Assumption No. 3 (Continued)

State College representatives agreed that the process of achieving balanced enrollment is evolutionary, but believe that 100% balanced enrollment is unobtainable. They said that anything over 50% of the fall quarter enrollment is now considered excellent summer quarter enrollment.

The Legislative Analyst does not believe that truly balanced enrollment will become a reality in the near future.

It is apparent that balanced enrollment has not yet been achieved. But in view of the Council's interpretation of this as an evolutionary process, we have devised the following test to determine if progress is being made toward balanced enrollment:

If the increase in enrollment (or FTEs) from one summer quarter to the next is greater than the increase in average three-quarter enrollment from one academic year to the next, then the campus or college is making progress toward balanced enrollment. In simple terms, this question was asked: "Is the summer quarter enrollment in FTEs increasing in number faster than the average three-quarter enrollment?" If the answer is positive, the campus or college is progressing toward balanced enrollment, insofar as the summer quarter compares to the average academic quarter.

Exhibit I is a display of the data required to apply the preceding test to two campuses and two colleges: Berkeley, UCLA, California State College at Los Angeles (CSCLA), and California State College at Hayward (CSCH). With the possible exception of CSCH, there is insufficient experience to provide a really meaningful result.

UCLA has had only one summer quarter and no conclusions can be drawn.

TOSLAN ROSS BAILEY & SMART

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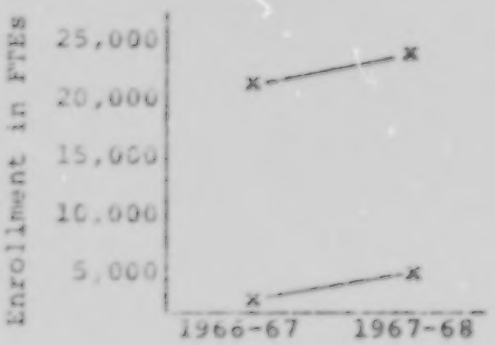
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

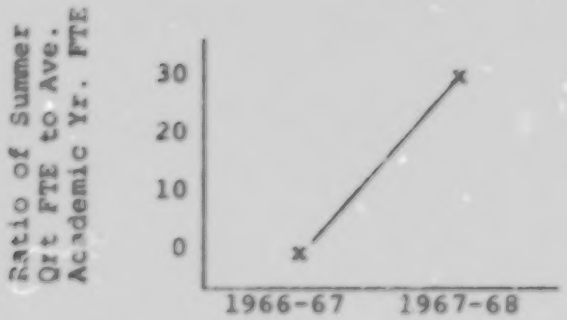
UNIVERSITY OF CALIFORNIA AT LOS ANGELES

	1966-67	1967-68
Summer Quarter FTE		
Enrollment	-0-	6,877
Growth Over Prior Year		6,877
Average Academic Year FTE		
Enrollment	22,062	24,232
Growth Over Prior Year		2,170
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		4,707

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in %) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data supplied directly by the University of California at Los Angeles

Assumption No. 3 (Continued)

Berkeley has conducted two summer quarters, with the second summer quarter attracting about 1,400 FTEs more than the first (20% increase). However, the academic year enrollment increased by a greater amount during the same period. This small sample of information would indicate that Berkeley is not progressing toward balanced enrollment, but several more years of experience is required for a conclusive result.

CSCLA has also conducted only two summer quarters. But the summer quarter enrollment increase at this college is greater than that of the corresponding academic years, indicating progress toward balanced enrollment. However, the prior remarks concerning an inadequate sample at Berkeley apply to CSCLA as well.

California State College at Hayward has offered a regular summer quarter since 1965. The data of Exhibit I shows that for the first three summer quarters, enrollment was increasing more slowly than the academic year enrollment. However, the enrollment increase from the summer quarter of 1967 to the summer quarter of 1968 was greater than the enrollment increase in the corresponding academic years. This indicates a change in enrollment trend at CSCH, with progress now being made toward balanced enrollment.

There has been some concern about the type of student attending the summer quarter. There are those who believe that only students who are accelerating their programs are contributing to balanced enrollment; and there are those who believe that only students who are <u>not</u> accelerating are contributing to balanced enrollment. The Council staff believes, and we agree, that <u>all</u> regularly matriculated students who attend the summer quarter contribute to balanced enrollment. The following analysis explains this.

Students who attend the summer quarter affect their academic program in one of the following ways:

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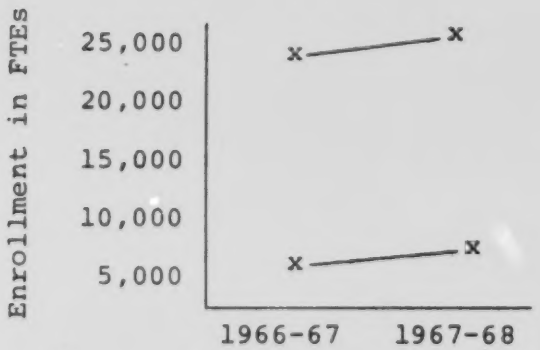
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

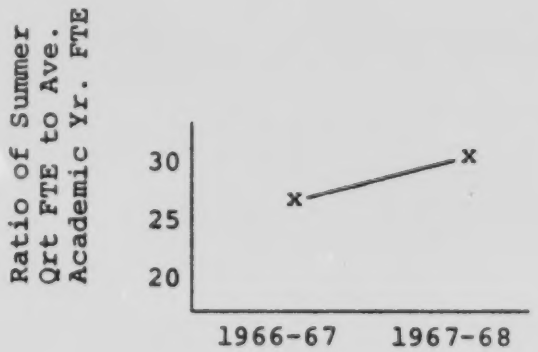
UNIVERSITY OF CALIFORNIA AT BERKELEY

	1966-67	1967-68
Summer Quarter FTE		
Enrollment	6,699	8,086
Growth Over Prior Year		1,387
Average Academic Year FTE		
Enrollment	24,599	26,306
Growth Over Prior Year		1,707
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		(320)

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in %) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data by the Office of Institutional Research, Berkeley

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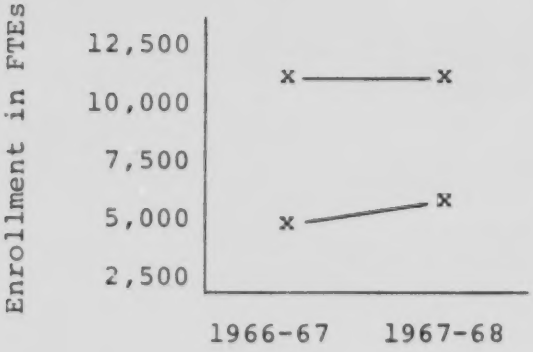
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

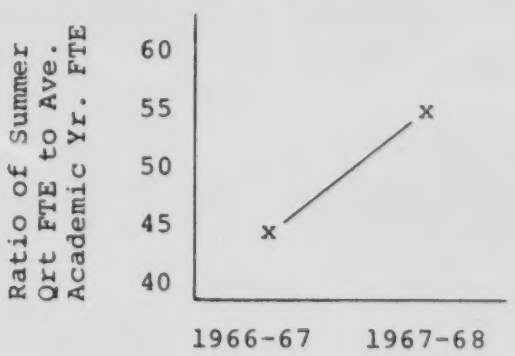
CALIFORNIA STATE COLLEGE AT LOS ANGELES

	1966-67	1967-68
Summer Quarter FTE		
Enrollment	5,367	6,660
Growth Over Prior Year		1,293
Average Academic Year FTE		
Enrollment	11,934	12,415
Growth Over Prior Year		481
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		812

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in%) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data by the Office of the Chancellor, California State Colleges

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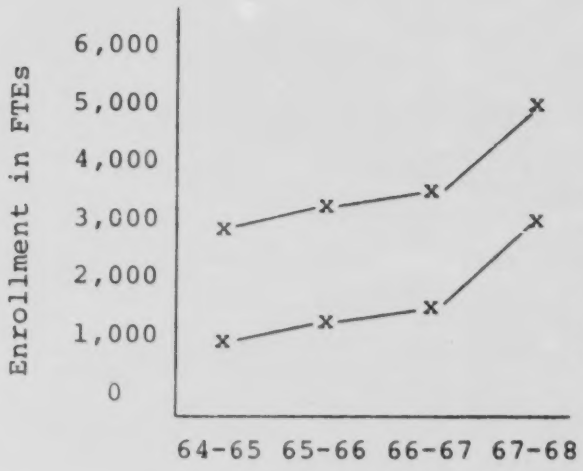
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

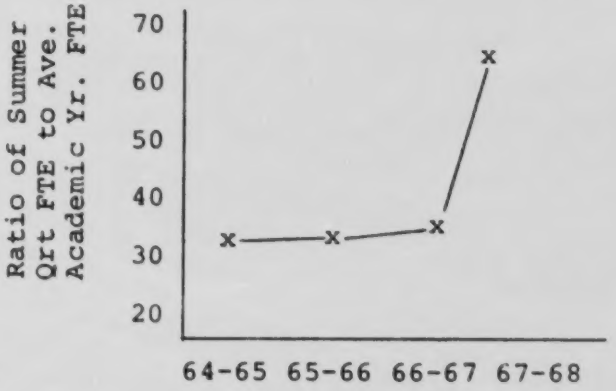
CALIFORNIA STATE COLLEGE AT HAYWARD

	1964-65	1965-66	1966-67	1967-68
Summer Quarter FTE				
Enrollment	981	1,295	1,779	3,418
Growth Over Prior Year		314	484	1,639
Average Academic Year FTE				
Enrollment	2,860	3,862	4,585	5,253
Growth Over Prior Year	____	1,002	723	668
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		(668)	(239)	971

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in %) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



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Assumption No. 3 (Continued)

1. They are accelerating their program in order to graduate earlier;

2. They are shifting, in order to take their vacation in another quarter; or

3. They are spreading, in order to reduce their load of courses in other quarters.

Exhibit II is an analysis that shows the effect of one student who fully accelerates, fully shifts, or fully spreads his program. These programs are compared with a normal student program. The basic assumptions used in this analysis are that a full student load is 15 student credit hours (SCH)/quarter, 180 SCH are required for graduation, and a student will take no more than 180 SCH.

Exhibit II indicates that, after a four year period, each program results in the same total SCH. The important result is that acceleration, shift, and spread free up student positions in quarters other than the summer quarter. Acceleration does not produce freed positions until after the third year, but after that time the benefits are commensurate with the shift and spread conditions. This result shows, then, that every student attending the summer quarter provides a free position in another quarter, and thereby contributes to balanced enrollment and reduced need for capital facilities.[1]

At each segment we discussed the positive inducements that could be made by the campuses to encourage

[1]This analysis ignores the fact that some students attending the summer quarter would have attended the summer session. This refinement simply reduces the magnitude of the result.

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EXHIBIT II

EFFECT OF ACCELERATION, SPREAD, AND SHIFT ON DISTRIBUTION OF STUDENT CREDIT HOURS BY QUARTER

Basic Assumptions:

1. Normal student load is 15 student credit hours (SCH)/quarter.

2. Requirement for a degree - 180 SCH.

Quarter	"Normal" Student	Acceleration	Shift	Spread
1 Fall	15 SCH	15 SCH	15 SCH	12 SCH
2 Winter	15	15	15	12
3 Spring	15	15	--	12
4 Summer	--	15	15	12
5 Fall	15	15	15	12
6 Winter	15	15	15	12
7 Spring	15	15	--	12
8 Summer	--	15	15	12
9 Fall	15	15	15	12
10 Winter	15	15	15	12
11 Spring	15	15	--	12
12 Summer	--	15	15	12
13 Fall	15	--	15	12
14 Winter	15	--	15	12
15 Spring	15	--	--	12
16 Summer	--	--	15	--
	180	180	180	180

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Assumption No. 3 (Continued)

voluntary summer quarter attendence. The University has adopted several policies in an attempt to do this:

- The student fee and service fees for the 1968 summer quarter are moderately less than for regular academic quarters;

- Students attending the summer quarter are guaranteed student housing for the rest of the academic year;

- Redirection of students from non-YRO campuses to YRO campuses for the summer quarter has been encouraged through the use of a simplified inter-campus transfer procedure; and

- Parking privileges are extended to summer quarter students at UCLA.

The State Colleges believe they can best promote enrollment in the summer quarter by offering the full scope and breadth of courses. They believe that if a wide selection of courses is available, students will be attracted to the campus for the summer. In addition, CSCH has promoted the summer quarter by contacting many high schools and junior colleges in the area, and explaining the concept of YRO to them.

The data of Exhibit I indicate that the State Colleges have been more successful than the University in attracting students to the summer quarter. One could postulate that the State College policy of offering a large supply of courses in the hope of creating demand is better than the University policy of offering an adequate supply of courses in order to meet expected demand. However, the different composition of the student bodies at the two segments complicates this comparison.

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Assumption No. 3 (Continued)

The major difference in composition is the large proportion of part-time older students at the State Colleges, in particular CSCLA, who work full time or almost full time to support families while obtaining their college degrees.

Surveys conducted at several University campuses and State Colleges indicate that student bodies located in large urban areas and including a large proportion of older, part-time students will probably be more receptive to YRO than will those in more rural areas and consisting, primarily, of young, full-time students.

We cannot, therefore, extend the analysis to say that a wider scope and breadth of summer quarter courses at the University would attract higher enrollment; or, conversely, that a narrower scope and breadth of courses at the State Colleges would reduce enrollment.

The question of increased summer quarter enrollment is important from the standpoint of the cost implications. When the components of enrollment, scope and breadth of courses offered, and proportion of fixed costs are analyzed together, the total cost of educating a student in the summer quarter can be computed.

ASSUMPTIONS CONCERNING EDUCATIONAL POLICIES

Assumption No. 4 and 5

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ASSUMPTION:

4. *"A beginning freshman may enter at the start of any term."*

5. *"Transfer students may enter at the beginning of any term."*

CONCLUSION:

Enrollment records show that freshmen and transfer students are being admitted to the University and the State Colleges in the summer quarter, as well as other quarters.

ANALYSIS:

We interviewed admissions officers at both the University and the State Colleges to determine their policy regarding freshmen and transfer admissions. They indicated that all students desiring to begin their program in the summer quarter are allowed to do so.

The Council staff assumes these conditions will be met by every campus and college offering a fourth quarter. This does not mean that students must be admitted at their discretion, but rather as openings exist at the discretion of the campus or college.

Assumption No. 6

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ASSUMPTION:

6. *"As a general rule, both entering and continuing students can enroll in courses which enable them to make a full term's progress toward their desired degree."*

CONCLUSION:

The evidence indicates that courses taken by a student in a summer quarter are not differentiable from the same courses taken in another quarter. Therefore, in all quarters, students can enroll in courses which enable them to make a full term's progress toward their desired degree.

ANALYSIS:

The Council staff defines this assumption to mean that a campus or college will have academic quarters that are equal to each other with respect to the following:

- all quarters will be equal in length;
- the same course offered in different quarters will have equal credit;
- courses offered in more than one quarter will be basically the same in terms of content and work.

Both the University and the State Colleges agreed with the Council staff's interpretation. They also stated that it was their intention to offer courses in the summer quarter that enabled students to make a full term's progress toward their desired degree. To test this assumption, we performed the following analysis at two campuses and two colleges - UCLA, Berkeley, CSCLA, and CSCH:

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For each of seven departments at each campus and college we selected a sample of 10% of the courses offered in the 1968 summer quarter. We compared each course with the same course offered in prior quarters on the basis of units of credit, hours of class, course content, and level of the instructor. We also interviewed the department heads to determine the departmental policy on summer quarter course offerings.

Our examination showed that, with only minor exceptions, the course offerings in the sampled departments were equal in all respects regardless of the quarter in which the courses were taught. The summer quarter courses were generally equal in units of credit, hours of contact, and level of faculty with the same course taught in another quarter. The catalog descriptions of courses did not vary from quarter to quarter, and our interviews with department heads revealed that the general course content and "level of difficulty" were approximately the same in all quarters. The department heads did indicate, however, that the same course taught by a different instructor could have somewhat different content, but this was a function of the instructor and not related to the quarter in which the course was taught.

Assumption No. 7

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ASSUMPTION:

7. *"Almost all students can continue in college for any number of consecutive terms in each of which they can make a full term's progress toward their desired degree."*

CONCLUSION:

In general, it appears that students at CSCLA and CSCH can easily continue in college for consecutive terms and make a full term's progress in each; that is, they can accelerate their programs if they choose. At Berkeley and UCLA, it is possible for most students to accelerate if they plan their programs a year or so in advance.

ANALYSIS:

This assumption relates to the scope and breadth of course offerings in the summer quarter. The Council staff believes attainment of full scope and breadth in summer quarter offerings should be viewed as an evolutionary process. That is, until balanced enrollment is achieved, the courses offered should generally be those where the normal student enrollment or, alternatively, student/faculty ratios can be maintained. The Council staff believes that course offerings should be tempered by cost considerations.

The Department of Finance, the Legislative Analyst and the University agree with the Council's interpretation that scope and breadth of summer offerings should be an evolutionary process. The Legislative Analyst said that the colleges should provide adequate courses for students to make normal progress towards their degree while maintaining as closely as possible the usual student/faculty ratio.

Assumption No. 7 (Continued)

However, both the Legislative Analyst and Department of Finance questioned whether limiting the number of courses in order to maintain the student/faculty ratio also limits the number of students who will ever attend a summer quarter. They believe that it may be better to reduce the student/faculty ratio if it is determined that limiting the course offerings reduces the probability that the summer quarter will eventually build up to the equivalent enrollment of other quarters.

The University does not attempt to equate the student/faculty ratios in every course, but attempts to approach certain desirable levels overall. To achieve this, required courses and popular elective courses constitute the majority of summer quarter course offerings. The University believes that a heavy offering of required courses will provide broad appeal while permitting students to fulfill their degree requirements.

The State Colleges disagree with the other interpretations. They believe that evolution should begin by offering a wide scope of courses in the summer quarter, even though costs increase, rather than reduce course offerings and possibly discourage some potential students from attending the summer quarter.

In order to test the validity of this assumption we examined course offerings and interviewed department heads of the same seven departments at the two campuses and two colleges discussed in the preceding assumption.

Discussions with department heads at CSCLA indicate that, in keeping with stated policy, substantially all courses are offered in the summer quarter. They consider the summer quarter to be the same as any of the academic quarters.

Assumption No. 7 (Continued)

Department heads at Berkeley and UCLA said that they were not offering a full scope and breadth in the summer quarter. For the most part, courses in their departments consisted of basic required courses and popular electives. Most of the department heads believed that, with proper advanced planning, a student could accelerate his program. In fact, many of the chairmen said the course offerings were specifically designed to permit acceleration.

We tested the scope and breadth in each of the sampled departments by counting the number of required courses offered, the number of elective courses offered, and the number of sections of each, for all terms since the Fall of 1966. At Berkeley and UCLA we found that the number of required courses offered in the summer quarter was moderately less than the number offered in the academic quarters. The number of elective courses in the summer quarters was much less than the number offered in the academic quarters - in some cases only one-third the number. The University is not offering full scope and breadth in the summer quarter.

At CSCLA, we found that almost all required courses were offered in the summer quarter, but with fewer sections. The number of elective courses offered is moderately less than the academic quarters.

At CSCH, the number of required and elective courses appear to be moderately reduced from the number offered in the regular academic quarters. CSCH could be described as offering wide scope and breadth, rather than full scope and breadth.

ASSUMPTIONS CONCERNING COST

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Assumption No. 8

ASSUMPTION:

8. *"Optimum use of physical plant is made for at least 48 weeks annually; such optimum use to include providing space for advising students, registration, instruction and testing."*

CONCLUSION:

We believe that progress toward balanced enrollment is also progress toward optimum use of the physical plant. If progress toward balanced enrollment is achieved, then optimum use of the physical plant is a reality.

ANALYSIS:

The Council staff believes this to be an evolutionary process with the first step being the conversion to YRO.

Progress toward balanced enrollment will produce improved utilization since it will cause facilities to be in basically equal use throughout the year, rather than just the nine-month academic year.

On the surface, it appears that when fixed facilities are used for twelve months rather than nine months, they are being used more efficiently. An example illustrates this point.

A campus that enrolls 10,000 FTEs in each of 3 regular academic quarters, is educating 10,000 annual FTEs. If a summer quarter is introduced, in which enrollment of 10,000 FTEs is achieved, the campus can service 13,333 annual FTEs. Assuming the campus capacity is 10,000 FTEs in any quarter, no more students can be admitted without reducing educational quality or, alternatively, providing new facilities. Therefore,

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Assumption No. 8 (Continued)

optimum use of the current physical plant is made with an enrollment of 13,333 annual FTEs balanced evenly over four quarters, or 48 weeks.

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Assumption No. 9

ASSUMPTION:

9. *"Operating costs, with minor exceptions, are functions of the size of enrollment and the total number of weeks in the calendar."*

CONCLUSION:

In general, operating costs at both segments are variable with enrollment and length of calendar, and are budgeted on that basis. However, certain deviations from this basic condition have been identified which help to explain the diversity of results experienced at individual campuses and colleges.

Certain costs are considered semi-fixed and are not fully budgeted in the summer quarter. These costs are general administration, library, and plant operation. Another exception to the assumption involves cycling costs, which are the recurring costs which vary as a function of operating three quarters rather than two semesters for the regular academic year.

At the University, the reduced scope and breadth of the summer quarter, plus the reduction of the fixed costs results in a lower budgeted cost/FTE in the summer quarter. At CSCH, higher faculty costs caused by wide scope and breadth of summer quarter, and lower enrollment, are offset by the lack of need to budget for fixed costs already covered by the academic year budget. This results in a lower total cost/FTE. CSCLA also budgets lower fixed costs in the summer quarter, but the wide scope and breadth of courses results in increased total cost/FTE.

Assumption No. 9 (Continued)

ANALYSIS:

The Council staff interpreted this as meaning that operating costs are primarily variable, but they believe there is probably a fixed or semi-fixed portion included in them. They expect that certain operating costs will be incurred whether or not a fourth quarter is offered, and once the decision is made to offer a fourth quarter there are additional operating costs which do not vary in proportion to fourth quarter enrollment.

As stated, this assumption can be considered valid, because both the University and State Colleges are using a budgeting base for most operating costs that treats them as variable. The largest portion of operating costs, faculty salaries, are based on formulas tied to the size of enrollment.

We found that both segments are treating certain operating costs as fixed or semi-fixed and are not budgeting them for the summer quarter. These fixed costs include portions of general administration, plant operation, and libraries. They include personnel costs and maintenance procedures, etc., which were in force before commencing year-round operations.

Exhibit III shows the major operating costs at two State Colleges, CSCH and CSCLA, and compares an academic year budget with a summer quarter budget. This Exhibit shows that the general administration, library and plant operation classifications contain a large proportion of costs which were budgeted during the normal academic year. Because of their fixed nature these costs did not have to be fully budgeted in the summer quarter. Thus, the summer quarter budget is essentially a incremental budget.

Fixed costs comprise a larger portion of the total year budget at CSCH than at CSCLA. This

EXHIBIT III

MAJOR OPERATING COSTS AT THE STATE COLLEGES

CSC Hayward[1,2] 1965-66	Academic Year	% of Total	Summer Quarter[7]	% of Total
General & Administrative	$ 332,747[1]	6.76%	$ 19,460	4.30%
Library	404,579	8.22	10,260	2.30
Plant Operation	675,620	13.73	16,308	3.66
Student Services	487,617	9.91	44,619	10.02
Instruction	3,019,948	61.37	354,544	79.63
Total	$ 4,920,511	99.99%	$ 445,191	99.98%

CSC Los Angeles[3,4] 1968-69	Academic Year	% of Total	Summer Quarter[5]	% of Total
General & Administrative	$ 1,351,398	6.73%	$ 88,050	2.81%
Library	1,241,548	6.19	-0-[6]	-0-
Plant Operation	1,990,665	9.92	87,546	2.80
Student Services	1,376,042	6.86	150,640	4.81
Instruction	14,112,323	70.03	2,805,743	89.58
Total	$20,071,976	99.73%	$ 3,131,979	100.00%

[1] Governor's Budget 1965-66.

[2] Excludes reimbursements and includes estimated salary savings.

[3] Governor's Budget 1968-69

[4] Excludes reimbursements and estimated salary savings.

[5] This is not the calendar summer quarter, but the summer quarter of the 1968-69 budget year. Cycling costs of $444,002 have been removed from this budget.

[6] A reduction in previously authorized personnel caused this figure to be zero.

[7] This is the summer quarter budget for the 1965-66 budget year.

Assumption No. 9 (Continued)

appears to be typical of the comparison of a small college to a large college.

Since the fixed costs represent a smaller portion of the total operating budget at a larger college, decreases in the fixed costs are less likely to have a large impact on total cost per student. These cost differences between the two colleges are amplified by the fact that full scope and breadth of courses is offered in the summer quarter at CSCLA, whereas wide scope and breadth is offered at CSCH. Exhibit IV presents a comparison of operating cost per FTE between the summer quarter and academic year at CSCH and CSCLA. The data for CSCH compares the summer quarter of 1965 with the 1965-66 academic year. The summer quarter cost at CSCH is lower than an average academic quarter, since the extra cost of offering a wide but less than full scope and breadth of courses in the summer quarter is more than offset by the fact that it is not necessary to request additional budgets for the fixed costs associated with general administration, library, and plant operating in the summer. Governor's Budgets for more recent years indicate that the cost advantage of the summer quarter at CSCH is at least as great as in 1965.

Operating cost per FTE at CSCLA is substantially higher in the summer quarter. This increase is caused almost entirely by higher costs of instruction and student services per FTE. Higher cost in these areas is primarily attributed to the college policy of offering full scope and breadth of courses in the summer quarter, thereby incurring lower student/faculty ratios.

The CSCLA data is somewhat inconsistent since the summer quarter costs are for the 1968-69 budget year and not the calendar year. The 1968-69 budget includes the costs of the last three-fourths of the 1968 summer quarter and the first

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EXHIBIT IV

COST COMPARISON

BETWEEN SUMMER QUARTER AND ACADEMIC YEAR QUARTER

	Actual Cost/FTE
California State College at Los Angeles	
Academic Year 1968-69 [1]	
$\frac{\$16,136,692}{13,880 \text{ FTEs}}$ [2] = $1,169/FTE/Year	
Average cost per academic year quarter	$ 390/FTE
Summer Quarter 1968 (budget year basis, with actual 1968 enrollment)	
$\frac{\$ 3,131,979}{6,660 \text{ FTEs}}$	$ 470/FTE
Cost of summer quarter greater than costs of academic year quarter	$ 80/FTE
California State College at Hayward	
Academic Year 1965-66 [3]	
$\frac{\$ 4,329,264}{3,862 \text{ FTEs}}$ = $1,121/FTE/Year	
Average cost per academic year quarter	$ 374/FTE
Summer Quarter 1965 (calendar basis) [4]	$ 327/FTE
Cost of summer quarter less than costs of academic year quarter	$ 47/FTE

1 The total operating cost is the same as shown in Exhibit II, but estimated reimbursements have not been deducted.

2 Memo to State College Presidents from Raymond A. Rydell, Executive Vice Chancellor, California State Colleges. Subject: Projected Annual Full-Time Students 1968-69 to 1967-68 (Support Budget), February 5, 1968.

3 1965-66 Governor's Budget (actual enrollment, including reimbursements.

4 Memo to Dr. Fred Harcleroad, Pres., Hayward State, from Richard Vr Meer, Consultant of Year-Round Operations, March 20, 1966.

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EXHIBIT IV

COST COMPARISON

BETWEEN SUMMER QUARTER AND ACADEMIC YEAR QUARTER

	Budget	Actual [2]
University of California at Los Angeles [1]		
Academic Year 1968-69 Average Cost Per Quarter	$592/FTE	$592/FTE
Summer Quarter 1968	$442/FTE	$586/FTE
Costs of summer quarter less than costs of academic year quarter	$150/FTE	$ 6/FTE

	Budget	Actual
University of California at Berkeley		
Academic Year, Average Cost Per Quarter		
1967-68	$592/FTE	$592/FTE
1968-69	$573/FTE	$573/FTE
Summer Quarter		
1967	$407/FTE	$627/FTE
1968	$426/FTE	$415/FTE
Cost of summer quarter less or (more) than costs of academic year quarter		
1967-68	$185/FTE	($ 35/FTE)
1968-69	$147/FTE	$158/FTE

[1] Budget Office, University of California, July 25, 1968.

[2] Academic year actual cost/FTE is assumed equal to the budgeted cost/FET. Summer quarter actual cost/FTE is the budgeted cost directed by the actual enrollment.

Assumption No 9. (Continued)

fourth of the 1969 summer quarter, which is budgeted for a greater number of FTEs. Therefore, part of the cost of the 1969 summer quarter is included, while the actual 1968 enrollment is used as a base. We believe that the actual calendar cost of the summer quarter would be somewhat lower.

As shown in Exhibit IV, the average cost of an academic quarter is computed by the Budget Office of the University on a segment-wide basis. The costs of the summer quarter, however, are computed for each campus. In general, the University, which does not offer full scope and breadth of courses in the summer, is budgeting for a lower cost/FTE in the summer quarter. However, because enrollment has been lower than expected, actual cost/FTE is higher than an academic quarter. When the University budgets for a realistic enrollment, the lower cost goals of the summer quarter should be met.

Cycling costs represent an important exception to the assumption that operating costs are variable with size of enrollment and length of the calendar. These costs are being treated by the segments as varying with the number of terms; they are defined as those recurring costs that vary as a function of operating three quarters rather than two semesters for the regular academic year. A summary of these costs is shown in Exhibit V for CSCH, CSCLA, Berkeley and UCLA.

The State Colleges on the quarter system have generally followed the lead of CSCLA in developing budget requests for cycling costs. The work done at CSCLA was in anticipation of changes in the work load that would occur after conversion was made to a quarter system. Subsequent to the CSCLA study, the other Colleges utilizing the quarter system specifically recognized cycling costs in the 1968-69 budget, basically using the formulas developed at CSCLA.

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EXHIBIT V

ANALYSIS OF CYCLING COSTS

Kind of Cost	CSC-Los Angeles[4] 1967-68	CSC-Los Angeles[4] 1968-69[1]	CSC Hayward[5] 1968-69	UC Berkeley[6] 1967-68	UC Los Angeles[7] 1966-67
General administration					
Personal services	$ 16,917	$ 17,464	$ 4,800	$ -	$ 17,376
Operating expenses	19,980	20,723	-	-	2,225
Total	36,897	38,187	4,800	-	19,601
Instruction					
Personal services	247,874[2]	306,153	54,667	-	-
Operating expenses	78,713	20,025	-	-	-
Total	326,587	326,178	54,667	-	-
Library					
Personal services	-	-	-	16,631	-
Operating expenses and equipment	-	-	-	-	-
Total	-	-	-	16,631	-
Student services					
Personal services	74,183	84,134	22,500	13,572	48,274
Operating expenses	10,987	10,245	5,394	-	4,250
Total	85,190	94,379	27,894	13,572	52,524
General institutional services					
Personal services	-	-	-	-	4,344
Special item:					
Publication costs	-	-	-	-	15,000
Total	-	-	-	-	19,344
Total Estimated Salary Savings	(6,128)[3]	(14,742)[3]	(3,281)		
Net Total Cycling Costs	$442,526	$444,002	$84,080	$ 30,023	$ 91,469

TOUCHE, ROSS, BAILEY & SMART

EXHIBIT V

ANALYSIS OF CYCLING COSTS

Sources

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1 One salary increase over 1966-67 is included in personal services for 1967-68 and 1968-69. Personal services for 1967-68 and 1968-69 are on the same salary base.

2 Of this total amount, approximately $55,000 was for instructional administration which is referenced in the narrative preceding this schedule. Figures for instructional administration are taken from sources 4, 5, 6, & 7.

3 Salary savings are estimated during the current year (1967-68) at 2%, while they are estimated at 4% for the budget year (1968-69).

4 Various budget notes, analysis and recommendations on supplementary quarter system and year-round operations budget, 1967-68, and discussions with accounting and budgeting personnel at CSCLA.

5 From conversations with budgeting and accounting personnel at CSCH and the special budget augmentation for 1968-69 cycling costs.

6 Budget Analyst, University of California, Berkeley.

7 Office of the Chancellor, UCLA, 1966-67, Supplemental Budget Request, May 17, 1965.

TOUCHE, ROSS, BAILEY & SMART

Assumption No. 9 (Continued)

The University campuses have dealt with cycling costs differently in their conversion from the semester system to the quarter system. At Berkeley, no cycling costs were recognized in the year 1966-67, since campus policy stated that no increased budget would be accepted before actual quarter system experience had been gained. In subsequent years, Berkeley has requested relatively minor budget amounts for cycling costs.

At UCLA, a supplemental budget for the year 1966-67 was specifically requested to cover expected increases in costs before actual quarter system experience was gained. In subsequent years, the personal services part of this supplemental budget was included in the general operating budget.

This difference between the University and the State College experience with cycling costs is critical to our analysis of the validity of this assumption.

A detailed analysis of the reasons for this difference would require a comprehensive review of work loads, productivity standards, and institutional differences which is beyond the scope of this engagement. However, it is possible to examine certain items that have been included as cycling costs in the State Colleges but not in the University.

Technical and clerical support within the Instruction catagory represents a major part of the cycling costs at the State Colleges. The most comparable cost catagory in the University budget is entitled Support Funds under Instruction and Departmental Research. It is difficult to make an exact comparison between these two support budgets because of institutional differences, different job requirements, and different items included in the budget item. However, a relative approximation is shown in Exhibit VI.

EXHIBIT VI

COMPARISON OF SUPPORT BUDGETS FOR 1966-67 - BERKELEY AND CALIFORNIA STATE COLLEGE AT LOS ANGELES

UC Berkeley

Supporting funds are budgeted at the rate of $5,125 per FTE faculty.[1]

CSCLA[2]

Authorized faculty[3] - 830.6 including 40.4 administrative faculty.

Technical/clerical instructional)	$ 942,494
Estimated staff benefits (10.3%)	9,708
Operating expenses (instructional)	534,142
Equipment	165,056
Total	$ 1,650,400

Support allowance" is $1,650,400 ÷ 830.6 or $1,986[4] per FTE faculty.

[1] Berkeley Campus, Budget Estimate: 1967 Summer Quarter, Narrative Summary of Proposals, page 2.

[2] Governor's Support and Local Assistance Budget for Fiscal Year July 1, 1966 to June 30, 1967.

[3] This includes substitute faculty, sabbatical leave positions, etc. and is therefore somewhat greater than instructional faculty.

[4] The inclusion of the amount of cycling costs for 1967-1968, $272,000 which excludes approximately $55,000 of instructional administrative positions, raises this to approximately $2,314 per FTE faculty.

Assumption No. 9 (Continued)

Exhibit VI indicates that the support funds per FTE budgeted at Berkeley are more than twice those budgeted at CSCLA. The potential significance of this difference is seen by determining the proportion of support cost to total cycling costs at CSCLA. Exhibit V indicates that technical and clerical support costs (within Instruction, as defined for the purpose of this comparison with the University) were approximately 73% of total cycling costs at that college.

Although the above analysis is not intended to show the exact relationship between support cost allowances in the University and State Colleges, it does indicate the magnitude of difference between the two. This difference may partially explain why the University has not requested cycling costs for the support function which represents such a large portion of the total cycling costs recognized by CSCLA.

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Assumption No. 9A

ASSUMPTION:

9A. *"Student/faculty ratios and teaching loads will continue as at present."*

CONCLUSION:

Student/faculty ratios are not being maintained at academic quarter levels. This is true at the State Colleges because of stated policy on scope and breadth, and it is true at the University because enrollment is below expectations. As enrollment at the State Colleges increases, we would expect student/faculty ratios to compare with the academic year averages. At the University, student/faculty ratios will be comparable to the academic year average when more accurate enrollment forecasts are made.

ANALYSIS:

The Council Staff believes the maintenance of normal academic year student/faculty ratios is essential, since faculty costs represent the most significant portion of operating costs. The Council staff assumes that scope and breadth of summer quarter course offerings at each campus or college will be determined by giving primary attention to the maintenance of normal student/faculty ratios as a prime objective.

The Legislative Analyst and Department of Finance agree with this interpretation, but point out that the student/faculty ratio will fall, given lower enrollment with comparable breadth and scope.

It is quite apparent that the differing policies at the University and State Colleges relating to scope and breadth in the summer quarter have a

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Assumption No. 9A (Continued)

profound effect on student/faculty ratios. By tempering the scope and breadth assumption with cost considerations, the University would be expected to have student/faculty ratios in the summer comparable to those in the academic year. Conversely, the State Colleges, offering full scope and breadth, would be expected to have lower student/faculty ratios.

In order to test the validity of these expectations, we sampled seven departments at CSCH, CSCLA, Berkeley, and UCLA. In each of these departments, we computed the overall student/faculty ratio in every term from the fall of 1966 through the summer of 1968. We then computed an academic year average student/faculty ratio and divided the departments' summer quarter student/faculty ratio by the academic year average. A simple average of these computations yielded the following results:

TABLE 2

Comparison of Student/Faculty Ratios

	Summer Quarter Student/Faculty Ratio As % of Academic Year Average Student/Faculty Ratio	
	Summer Quarter 1967	Summer Quarter 1968
UCLA	---	92.3%
Berkeley	65.9%	84.5
CSCH	81.8	80.1
CSCLA	80.6	85.4

At UCLA, where scope and breadth has been restricted, the summer quarter student/faculty ratio is slightly less than the academic year ratio because summer enrollment was below expectations.

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Assumption No. 9A (Continued)

At Berkeley, summer enrollment in both years was substantially below expectations. A 20% increase in enrollment from the summer of 1967 to the summer of 1968 is reflected in the sharp increase in student/faculty ratio.

The student/faculty ratio at CSCH has remained about the same. That college maintains wide scope and breadth in the summer quarter and this accounts for the relatively low relationship with the academic year student/faculty ratio.

At CSCLA, a full scope and breadth of summer quarter courses is offered, and the relatively low student/faculty ratio experienced in both years is commensurate with this.

The second part of this assumption states that "teaching loads will continue as at present", meaning the summer quarter teaching loads will be comparable to those for the normal academic year. In talks with administrators and faculty at both segments, we found there was no difference in the teaching load for regular faculty between the academic year and the summer quarter.

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Assumption No. 9B

ASSUMPTION:

9B. *"Students and faculty will be provided services in the summer term equivalent to those provided in other times."*

CONCLUSION:

Student and faculty services in the summer quarter are equivalent to those in other quarters.

ANALYSIS:

The services included in this assumption are those grouped under Services in the standard Charts of Accounts of the University and the State Colleges.

In interviews with Budget Officers at both segments, we determined that summer quarter budgets provide student service standards equivalent to those of the academic year. Also, the full range of staff benefits is provided for all additional personnel recruited for the summer quarter.

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Assumption No. 9C

ASSUMPTION:

9C. *"Faculty salaries will be based upon the number of weeks of educational service provided by the full-time staff during the year."*

CONCLUSION:

We found that faculty members are paid in direct proportion to the total number of weeks of educational service provided.

ANALYSIS:

Interviews with administrators at the two segments confirm that faculty members who teach the summer quarter are compensated in direct proportion to the number of weeks of extra service they provide. Both segments said, however, that consecutive teaching through more than one summer was greatly discouraged, if not prohibited. In the case of the University, faculty members teaching four quarters consecutively are urged to take an additional quarter of leave in the following year, rather than receive extra compensation.

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Assumption No. 9D

ASSUMPTION:

9D. *"Research support will be provided regular faculty in the summer term equivalent to that provided in other terms."*

CONCLUSIONS:

Regular University faculty teaching in the summer quarter are provided with State research support funds equivalent to that provided in other quarters.

ANALYSIS:

The Council staff believes that regular formula grants will be provided to regular University faculty teaching the summer quarter. This assumption does not apply to the State Colleges, since no research grants are made to them.

Interviews with department heads at Berkeley and UCLA indicate that requests for formula grants are approved once a year, in the Spring. Faculty members who plan to teach in the summer quarter have an equal opportunity to share in these grants. In addition, provision is usually made for new faculty members, who start in the summer quarter, to share in these grants on an equal basis.

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Assumption No. 9E

ASSUMPTION:

9E. "Current standards for utilization of plant will be maintained."

CONCLUSION:

We found that both segments plan to maintain current planning standards for utilization of student facilities. But these standards are not being met in the summer quarter because of the reduced enrollment.

ANALYSIS:

The Council staff assumes that the standards for utilization will be maintained in accordance with those stated in Space and Utilization Standards, California Public Higher Education.

Planning officers at both segments agree that space and utilization planning standards will be maintained at current acceptable levels. A brief sample of computations for capital outlay projections at the University showed that there will be no basic change in space and utilization standards for student facilities due to YRO. However, because of reduced enrollment in the summer quarter, these standards are not being met now, both at the University and the State Colleges.

Assumption No. 10

ASSUMPTION:

10. *"Cost increases at the first year-round campus or college will be offset in part by cost decreases at other campuses within the segment. As more campuses or colleges within a segment begin year-round operations, cost offsets will increase system-wide."*

CONCLUSION:

If enrollment increases at YRO campuses produce reductions at other campuses, operating cost increases at YRO campuses are partly offset by cost decreases at the other campuses. While administrators at both segments believe this is probably a valid assumption, they cite the lack of evidence to prove it.

ANALYSIS:

The Council staff assumes that only operating costs are involved in this assumption. They believe that segment-wide cost offsets caused by intercampus shifts will occur until all campuses in a segment are on YRO.

This assumption is closely tied to assumption 2A., regarding shifts in enrollment between campuses or colleges because of YRO. We believe that there is insufficient evidence to prove that increases in enrollment at a YRO campus would reduce enrollment elsewhere in the segment.

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Assumption No. 11

ASSUMPTION:

11. *"Additional regular staff required in colleges or on campuses where year-round operation is initiated will be provided offices equivalent to those now available for the current regular staff."*

CONCLUSION:

Both segments make every attempt to provide equivalent offices to new full-time faculty members in the summer quarter. In some cases requests for additional construction funds for this purpose have been granted to campuses. Other campuses and colleges will be requesting funds for this purpose in the future.

ANALYSIS:

The Council staff interprets this assumption as meaning all full-time (three quarters) faculty will be provided office space on an annual basis regardless of which three out of four quarters are taught during the year.

Representatives of both segments agreed that this policy is being followed whenever possible. The University provides each new permanent faculty member with an office commensurate with his rank. Visiting faculty, both from other campuses of the University and from outside the University, are loaned offices based on availability. Regular faculty members are permitted to hold their offices year-round, whether or not they are teaching. They are expected to use their offices for research and study in those quarters they are not teaching; and if the offices are not used, they are made available to temporary faculty.

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Assumption No. 11 (Continued)

At Berkeley, the administration expects that 25% of the faculty positions of the summer quarter will be new full time faculty. To provide comparable office space for them, the University estimated it would require $3,390,120 for capital facilities by the year 1970 at Berkeley.[2] To begin planning for this space and provide temporary facilities, $189,388 was allocated in the 1967 summer quarter budget.

The State Colleges have also recognized that permanent additions to the faculty, required by the summer quarter, must be provided new office facilities. Capital requests for this purpose have not been included in budget requests to date, but planning officers indicate these requests are to be included in future budgets.

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[2] Berkeley Campus - Estimate of Major Capital Improvements: Summer Quarter, 1967. Narrative Summary of Proposals.

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Assumption No. 12

ASSUMPTION:

12. *"For instructional facilities more efficient use on a year-round college or campus will effectively reduce the scope of need for such facilities at other colleges or campuses."*

CONCLUSION:

On an individual campus or college, YRO defers the need for facilities. It also creates increased economies in the use of these facilities, by servicing a greater number of FTEs with the same facilities. Finally, the increased capacity provided by YRO reduces the need for redirection of students to other campuses, and ultimately results in a reduced need for new campuses. The reduced need for facilities in the segment is simply the summation of a deferred need for facilities at the individual campuses and the more efficient use of facilities in existence, thereby reducing the need for new campuses.

ANALYSIS:

The Council staff defines instructional facilities as entire campuses including "core" facilities and not just "variable" facilities. Core facilities include the library, field house, gymnasium, etc., while variable facilities are classrooms, laboratories, and dormatories.

A basic premise of this assumption is that the community of students for a segment does not change due to YRO (Assumption 2.).[3] Therefore each segment can be considered a closed system where the

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[3] We previously concluded that Assumption 2. is probably valid although there is not sufficient evidence available to support it conclusively.

Assumption No. 12 (Continued)

input is the total number of new students each year, and the output is the number of graduates and dropouts.

If the number of new students each year is equal to the number of graduates and dropouts of the previous year, the total enrollment remains constant (that is, the increment in enrollment is zero). If there is adequate capital capacity in a given year and there is no increment in enrollment the following year, then no additional facilities are required.[4] Therefore, increases in facilities are required to service only increments in enrollment.

Enrollment projections for both segments predict positive increments in enrollment from year-to-year. This is a natural result of the expanding population of the State of California.

Given that increments in enrollment require increases in facilities and that enrollment projections predict positive increments in future years, we have developed the following analysis to demonstrate that the initiation of YRO at the University and State Colleges will reduce the need for facilities.

We have used the California State College system as the example for our analysis. In this segment, facilities are planned for projected total annual full time equivalent (FTE) students, 8 a.m.

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[4]This simplified analysis assumes of course, that the proper mix of physical facilities has been attained, and that it matches the mix of enrollment (i.e., Physics, Fine Arts, Math, etc.).

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Assumption No. 12 (Continued)

to 5 p.m.[5] Only the academic year enrollment is included in the computations. Exhibit VII shows a nine year projection of the total annual enrollment of the State Colleges (academic year), and also a projection of the summer quarter enrollment. We found that the academic year projections in this Exhibit have been reduced to reflect students anticipated to switch to the summer quarter. This means that if the summer quarter was not offered, the academic year enrollment would be the sum of the two projections, as shown in the total enrollment column.[6]

Assuming that the State Colleges have adequate capital capacity (but no excess capacity) in 1968-69, then the segment needs new facilities for 11,070 projected incremental FTEs in 1969-70, 11,500 additional incremental FTEs in 1970-71, etc. These are the incremental enrollment projections, taking into consideration the timetable for conversion of each State College to YRO. If we take the condition of no YRO, and again assume capacity in 1968-69, then the incremental FTEs are 14,440 in 1969-70, 12,330 in 1970-71, etc.

Thus, the initiation of YRO, causes the State Colleges to have a lower yearly increment in enrollment because part of the increased demand

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[5]Memo to: State College Presidents from Raymond A. Rydell, Executive Vice Chancellor, the California State Colleges. Subject: Projected Annual Full Time Equivalent Students 1968-69 to 1976-77 (Capital Outlay). December 19, 1967.

[6]This is an approximation. Actually, a number of students projected in the summer quarter enrollment would attend the self-supporting summer session. The total demand is then somewhat less than the sum of the two projections. The analysis will be refined in Section II to include this factor.

EXHIBIT VII

STATE COLLEGE ENROLLMENT PROJECTIONS, 1968-69 - 1976-77

	Total Annual FTEs (8 a.m.-5 p.m.)[1] (Academic Year)	Enrollment Increment (FTEs)	Summer Quarter FTEs[2] (Annualized)[3]	Total Annual Enrollment (FTEs)	Total Enrollment Increment (FTEs)
1968-69	139,220		4,110	143,330	
1969-70	150,290	11,070	7,480[4]	157,770	14,440
1970-71	161,790	11,500	8,310	170,100	12,330
1971-72	172,550	10,760	13,880	186,430	16,330
1972-73	183,850	11,300	15,820	199,670	13,240
1973-74	194,610	10,760	19,830	214,440	14,770
1974-75	205,140	10,530	23,740	228,880	14,440
1975-76	214,600	9,460	30,130	244,730	15,850
1976-77	224,950	10,350	32,930	257,880	13,150

[1]Rydell, December 19, 1967, op. cit.

[2]Memo to State College Presidents from Raymond A. Rydell, Executive Vice Chancellor, the California State Colleges. Subject: Projected Annual Full Time Equivalent Students 1968-69 to 1977-78 (Support Budget). February 5, 1968.

[3]The annualized summer quarter enrollment (FTEs) is equal to one-third of the summer quarter enrollment (FTEs).

[4]This enrollment value assumes San Francisco State College will convert to YRO in the summer of 1969. However, later information reveals that this conversion has been delayed until the summer of 1970. The updated projection is included in Exhibit XI.

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Assumption No. 12 (Continued)

is being satisfied by the summer quarter. Based on our earlier conclusion, this reduced increment in enrollment results in a reduced need for facilities.

We have shown that a segment can realize greatly reduced need for new facilities by offering a summer quarter. The data of Exhibit VII indicates that the projected increases of summer quarter enrollment approximate a full campus every five years. Therefore, it is fairly easy to visualize how the segment can reduce its actual capital outlays.

But somewhat different results are obtained when one analyzes an individual campus or college. Given that a campus or college will be built to a certain ceiling capacity regardless of YRO, how is the need for facilities reduced? The following analysis will demonstrate this.

Exhibit VIII presents nine year enrollment projections for CSCLA. The academic year projections are based on the assumption that a summer quarter is offered. We have again assumed that the total demand for education at CSCLA is the sum of the academic year enrollment and the annualized summer quarter enrollment, as presented in the column titled Total Annual Enrollment of Exhibit VIII.

The enrollment ceiling for CSCLA is presently set at 16,800 FTEs. If YRO were not in effect on that campus, ceiling enrollment would be reached after the 1972-73 academic year, and facilities would have to be scheduled for the enrollment shown in the Total Annual Enrollment column. With YRO in effect, ceiling enrollment (in the academic year) is not reached until after 1977. Thus, there is a delay of at least four years before facilities for ceiling enrollment of 16,800 FTEs must be provided.

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EXHIBIT VIII

ENROLLMENT PROJECTIONS FOR LOS ANGELES STATE, 1968-69 - 1976-77

	Annual FTEs (8 a.m.-5 p.m.)[1] (Academic Year)	Enrollment Increment (FTEs)	Summer Quarter FTEs[2] (Annualized)	Total Annual Enrollment (FTEs)	Total Enrollment (Increment (FTEs)
1968-69	11,500		2,080	13,580	
1969-70	12,170	670	2,190	14,360	740
1970-71	12,840	670	2,360	15,200	840
1971-72	13,580	740	2,470	16,050	850
1972-73	14,130	550	2,640	16,770	720
1973-74	14,680	550	2,670	17,350[3]	580
1974-75	15,210	530	2,770	17,980	630
1975-76	15,760	550	2,870	18,630	650
1976-77	16,290	530	2,980	19,270	640

[1]Rydell, December 19, 1967, op. cit.

[2]Rydell, February 5, 1968, op. cit.

[3]The present ceiling limit for Los Angeles State is 16,900 FTEs.

Assumption No. 12 (Continued)

In addition, once ceiling enrollment is reached, the total annual enrollment served under YRO is much greater than without YRO, thereby permitting increased efficiency in the use of the facilities. In the 1976-77 academic year, facilities are required for 16,290 academic year FTEs, but the total enrollment is 19,270 FTEs.

SECTION II

COST COMPARISON OF YRO AND NON-YRO ALTERNATIVES

We have shown, in the analysis of Assumption 12., that YRO reduces the potential academic year enrollment on a campus or college and in a segment, and thereby reduces the need for new facilities. This section will address itself to the question: "Does YRO provide actual cash savings to the State of California?"

On the following pages we have shown first the general framework of our analysis followed by specific application of the analysis to the University of California and then the California State Colleges. Finally, we have included a recommended method for selecting individual campuses and colleges for conversion to YRO.

FRAMEWORK OF THE ANALYSIS OF YRO

Analysis of YRO

The ideal result of this analysis would be to show actual out-of-pocket savings for the State. However, there are a number of complicating factors which prevent us from doing this. First, planned capital outlays at the two segments are based on long range enrollment projections. However, the enrollment projections for a given year are changed annually as that year approaches. Because of the lead time required to provide new facilities, the actual capacity available only approximates the required capacity for the enrollment that actually attends that year. Therefore in any year, one can never be certain what savings are due to YRO.

Second, because of the lead time required to provide new facilities, new facility costs in one year cannot be directly attributed to that year's enrollment requirements.

Several other factors complicate this problem. If actual cash savings are suggested, a natural question to ask is: "What, specifically, was the money not spent on?" This question cannot be answered, since we can't identify a building that was never built. Another complication is the action of the Governor and the Legislature, since approved capital outlay budgets can be vastly different from budget requests. If a segment requests a capital outlay budget that is $10 million less than it might have been without YRO, and this budget is then reduced another $20 million by the Legislature, we question whether it can be said that YRO caused savings of $10 million that year.

Because of these difficulties, we found it better to base our analysis on the theoretical savings derived from enrollment projections. This approach shows that the State must be saving money if it defers building new facilities on a campus or avoids new campuses due to the initiation of YRO.

However, the results of testing Assumption 9., which predicts the effect of YRO on operating costs, indicate that the cost of operating a summer quarter at some campuses is higher than the cost of an academic quarter. If this difference in operating cost is larger than the savings incurred by reduced capital outlays, the net result will be a higher cost to the State. In the following, we will present a framework for analysis of this problem, and then provide a computation which estimates the total theoretical savings (or increased cost) to the State due to the YRO decision.

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Analysis of YRO (Continued)

Our analysis is designed to provide the difference in the total cost of education between the YRO and non-YRO alternatives. To illustrate the framework of our analysis, we have postulated the following simplified problem:

Problem: The segment is at capacity and one additional FTE is to be admitted. This is an increment in total student enrollment, and not simply an additional student for one year only. The problem, then, is to educate this FTE through one of the two acceptable alternatives:

1) Non-YRO (build facilities to provide space for one annual FTE during the normal academic year of two semesters and summer session).

2) YRO (operate a summer quarter which will provide education for one annual FTE in a four quarter system).

In conformity with our plan, the total cost differences of the two alternatives must be evaluated.

Non-YRO Alternative (Build new facilities)

The capital outlay required to build facilities necessary to accomodate the incremental FTE represents the only unique cost associated with this alternative. Operating costs/FTE, such as Instruction, Student Services, etc., are incurred in the YRO Alternative as well.

Capital outlay cost per incremental FTE is determined by obtaining the long term capital outlay in a given period of time divided by the total incremental FTEs in that period. This cost can be shown as either a one-time cash outlay, or a series of payments representing principal payback and interest on long-term bonds. Higher Education bonds in the State of California are normally 25 year bonds with equal annual retirement. In the computations that follow, bond payments will be spread over this period.

Facilities have an estimated lifetime of 40 years. Therefore the total differential costs of the two alternatives must be compared over that period of time.

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Analysis of YRO (Continued)

YRO Alternative (Operate a summer quarter)

If a decision is made to educate one annual FTE in the summer quarter, the need for new facilities is eliminated. There are, however, a number of unique costs associated with this alternative:

1) Operating Cost - The results of Assumption 9. indicate that on some campuses the operating cost/FTE in the summer quarter is greater than in an academic quarter. If the segment decides to operate a summer quarter, one annual FTE must be educated in every summer quarter to perpetuity. Therefore, the increased operating cost of the summer quarter will continue to be incurred for the 40 years of the decision period.

2) Lost Revenue of Summer Session - Studies indicate that a certain percentage of students attending the summer quarter would have attended a self-supporting summer session. The revenue lost by having these students attend the state supported summer quarter is also a perpetual cost for the 40 years of the decision period.

3) Cycling Costs - The increased costs due to cycling are not a direct function of the summer quarter, since these costs would be incurred whether or not a summer quarter was offered. However, the sole reason campuses and colleges convert to the quarter system is to permit the initiation of a summer quarter. In the absence of the YRO decision, campuses and colleges would not convert and would not incur cycling costs. Therefore, the annual cycling costs must be considered a perpetual cost of the YRO decision.

4) Conversion Costs - Costs associated with planning the conversion to the quarter system are considered YRO costs for the same reasons as cycling costs. Conversion costs are one-time cash outlays.

To demonstrate the application of this approach, certain values for the various cost elements have been used:

Analysis of YRO (Continued)

Non-YRO alternative cost - $5,000/FTE capital outlay cost (we will use a series of payments representing a 25 year bond with equal annual retirement and 5% interest).

YRO alternative costs -

1) Summer quarter operating costs - Increase of $150/(annual FTE) for a period of 40 years.

2) Lost revenue of the summer session - $50/(annual FTE) for 40 years.

3) Cycling costs and conversion costs/FTE are ignored in this example.

Exhibit IX shows the unique cash outlays associated with each alternative. The non-YRO alternative flow represents the payment on a 25 year bond at 5% interest and the YRO alternative flow represents the increased operating cost and lost revenue of operating a summer quarter.

In this example the total cash outlay over a 40 year period is slightly greater for non-YRO than YRO. However, costs associated with the non-YRO alternative are much higher in the earlier years. Because money received or spent today is more valuable than money promised or committed later, we have included a standard present value computation. The present value is the discounted cash flow, using a 5% discount factor, for each alternative. The results show that the alternative of building new facilities still results in the higher cost. However, the decision is more clear-cut since the time value of money is included.

This example has demonstrated our approach to the computation of the cost implications of YRO. Comparison of cumulative costs between the two alternatives indicates that YRO saves $250 over a 40 year period. However, the present value method highlights the fact that in the earlier years the bond payments on new facilities are much higher than the increased operating costs of YRO.

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EXHIBIT IX

TOTAL COST OF THE TWO ALTERNATIVES

OF THE SAMPLE PROBLEM

Year	Non-YRO Alternative[1] (Building Student Facility)	YRO Alternative (Operating a Summer Quarter)
1	$ 450	$ 200
2	440	
3	430	
4	420	
.	.	
.	.	
.	.	
23	230	
24	220	
25	210	
26	210	
27	0	
.		
.		
.		
40	0	200
	$8,250	$8,000
Present Value (5% Discount Rate)	$5,000	$3,432

[1]Represents a $5,000 bond retired in equal annual installments for 25 years, plus 5% interest on the amount outstanding.

THE UNIVERSITY OF CALIFORNIA

COMPARISON OF YRO AND NON-YRO ALTERNATIVES

YRO Analysis for the University of California

CONCLUSION:

The results of our analysis show that total savings at the University will be $320,381,000 over a 48 year period, for conducting YRO for only a nine year period. The reduced need for facilities will cause a reduction in capital outlay of $293,749,000, and the economies of operating a summer quarter will produce additional savings of $26,632,000. Through the 1975-76 budget year, the accumulated savings will be $84,605,000.

ANALYSIS:

We have shown, in the analysis of Assumption 12., that the capital savings incurred at each individual campus can be summed together to show capital savings for an entire segment. The computations that follow were made, for the entire segment, in the same manner as the illustrative example.

For the University, the cost computations of the two alternatives (building new facilities or offering year-round operations) were based on the segment-wide summer quarter enrollment that was projected for nine years in University of California 1969-1974 Capital Improvement Program.[1] With these projections, a number of critical assumptions were made in order to produce the ensuing analysis:

1. Since the enrollment projections covered a nine year period, and we wanted to limit the length of the computations, we assumed that after the ninth year there would be no incremental FTE additions in the summer quarter. Therefore, no facilities would be built after the ninth year, but the operating cost economies or diseconomies of the summer quarter would continue through the forty-eighth year.

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[1]Note: The increases in academic year enrollment are not included in this analysis, since new facilities for those students must be built whether a summer quarter is offered or not.

YRO Analysis for the University of California (Continued)

2. Studies indicate that in the absence of YRO, 75% of the first year's projected summer enrollment would have to be educated in the academic year. We assumed that 25% of the FTE enrollment of the first summer quarter would be educated in a self-supporting summer session, and this number would then remain constant through the 48 year period. Our investigations lead us to believe that summer session enrollment in many campuses in the state is almost saturated, and is not expected to increase significantly in the future.

3. Capital outlay per incremental FTE student was assumed to be $13,000. This is based on a study done by R. V. Walen, of the University, in which the historical and projected capital outlay costs for the period 1945-1972 were adjusted to Engineering News Record Construction Cost Index 1050.

4. The capital outlay in each year was represented by a 25 year bond, which is retired in equal annual installments plus 3-1/2% interest. Higher Education bonds in California normally have a 25 year lifetime, and a major underwriter of these bonds estimated that the long-term interest rate is 3-1/2%.

5. We assumed there is no lead time to provide new facilities for incremental FTEs. The inclusion of a lead time would simply expand the time horizon of the computation and not change the results appreciably.

6. For the number of FTEs that would have been educated in the summer session, we assumed the lost revenue to be $200/FTE, based on approximate tuition of $100 for a summer session.

7. The University has budgeted for lower operating cost/FTE in the summer quarter than for academic year quarters. However, low enrollments have caused the actual summer quarter cost/FTE to be higher than an academic quarter. University policy states that budgeting in the future will be on a more realistic enrollment base. Therefore,

YRO Analysis for the University of California (Continued)

in the near future the University will achieve lower operating cost/FTE in the summer quarter. We have used the following schedule in our computations:

Year	Increased (Decreased) Operating Cost of Summer Quarter Per Annual FTE
1	$ 100
2-3	50
4-6	0
7-8	(50)
9-48	(100)

The computations of Exhibit X present the unique cash outlays associated with the non-YRO and the YRO Alternatives. They show that if all the FTEs educated in the first nine summer quarters (exclusive of summer session attendees) were to be educated during the academic year, there would be an additional capital outlay requirement of $293,740,000. Alternatively, the savings associated with educating the total incremental enrollment in summer quarters is $26,632,000. These results show that the savings incurred by YRO based on current enrollment projections for the next nine years at the University, is $320,381,000 (spread over 48 years). Clearly, significant savings are produced by YRO.

The present value computations of the two alternatives show a narrower difference because the initial capital outlays are spread over nine years, rather than being incurred at once. However, the results do show that the net present value of these savings is about $187,000,000 at the University.

In addition, the last column of Exhibit X indicates the projected cash outlay savings as they cumulate annually. Through the 1975-76 budget year the savings are $84,605,000.

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EXHIBIT X

COST COMPARISON OF THE YRO AND NON-YRO ALTERNATIVES
AT THE UNIVERSITY
(000 Dollars)

	Year	Summer Quarter Enrollment (Annual FTES)	Incremental FTES for New Facilities	Capital Outlay Required	Total Cost of Non-YRO Alternative (Bond Payments	Total Cost of YRO Alternative	Cumulative Savings of YRO
1	- 1967-68	2,380	1,785	$23,205	$ 1,740	$ 1,495	$ 245
2		7,055	4,675	60,775	5,266	960	5,551
3		9,114	2,059	26,767	8,155	1,063	12,643
4		11,066	1,952	25,376	9,903	607	21,939
5		12,240	1,174	15,262	10,857	607	32,189
6		13,637	1,397	18,161	12,007	607	43,589
7		14,569	932	12,116	12,678	(122)	56,389
8		15,536	967	12,571	13,367	(170)	69,926
9	- 1975-76	16,128	592	7,696	13,673	(1,006)	84,605
10					13,390	(1,006)	99,001
11					13,107	(1,006)	113,114
12					12,825	(1,006)	126,945
13					12,542	(1,006)	140,493
14					12,259	(1,006)	153,758
15	- 1981-82				11,977	(1,006)	166,741
16					11,694	(1,006)	179,441
17					11,411	(1,006)	191,858
18					11,129	(1,006)	203,993
19					10,846	(1,006)	215,845
20					10,563	(1,006)	227,414
21					10,281	(1,006)	238,701
22					9,998	(1,006)	249,705
23					9,715	(1,006)	260,426
24					9,433	(1,006)	270,865
25	- 1991-92				9,149	(1,006)	281,020
26					7,938	(1,006)	289,964
27					5,257	(1,006)	296,227
28					4,022	(1,006)	301,255
29					2,879	(1,006)	305,140
30					2,177	(1,006)	308,323
31					1,381	(1,006)	310,710
32					611	(1,006)	312,527
33					319	(1,006)	313,852
34						(1,006)	314,858
35	- 2001-02					(1,006)	315,864
36						(1,006)	316,870
37						(1,006)	317,876
38						(1,006)	318,882
39						(1,006)	319,888
40						(1,006)	320,894
41						(768)	321,662
42						(300)	321,962
43						(95)	322,057
44						101	321,956
45						218	321,738
46						358	321,380
47						451	320,929
48	- 2014-15					548	320,381
	Total				$ 293,749	($26,632)	
	Present Value (3½% Discount Rate)				$177,755	($9,907)	

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YRO Analysis for the University of California (Continued)

We examined the computations further and tested the sensitivity of the results to changes in the assumptions.

We found that the total additional cost/annual FTE of the YRO alternative would have to exceed $800 (for all 48 years) before the non-YRO alternative would become the better one. Also, if no capital outlay savings were to be shown, the YRO alternative would still be the lower cost alternative because of the operating savings of the summer quarter.

The original assumptions of this analysis were based on studies and on our best estimate of the experience to date. On this basis, significant savings are incurred by YRO at the University.

THE CALIFORNIA STATE COLLEGES

COMPARISON OF YRO AND NON-YRO ALTERNATIVES

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YRO Analysis for the California State Colleges

CONCLUSION:

The total savings for conducting YRO at the State Colleges for only nine years are $56,148,000, spread over 48 years. The reduced need for facilities will cause a reduction in capital outlay of $281,354,000. However, the diseconomies of operating a summer quarter will cause additional costs of $225,206,000, resulting in the net savings of $56,148,000. Through the 1975-76 budget year, the accumulated savings at the State Colleges will be about $12,000,000.

The reduced savings of the State Colleges, compared to the University, are caused by two factors. First, the capital outlay per incremental FTE at the University is nearly double the capital outlay at the State Colleges, and therefore there is more to be saved per FTE at the University. And second, the State Colleges' policy of full scope and breadth of summer quarter courses, with reduced enrollment, does not produce the same economies of operation as the limited scope and breadth at the University.

ANALYSIS:

The cost computations of the two alternatives for the State Colleges were based on the segment-wide summer quarter enrollment projections.[2] A number of assumptions were made in order to complete the analysis:

1. The computations for the State Colleges were based on a nine year enrollment projection. In order to compare with the University computations, the first year of the computations shows actual 1967-68 summer quarter enrollment, and the next eight years are projections.

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[2]Memo to State College Presidents from Raymond A. Rydell, Executive Vice Chancellor, California State Colleges. Subject: Projected Annual Full Time Equivalent Students 1968-69 to 1977-78 (Support Budget). February 5, 1968. This enrollment projection has been revised to include a one-year delay in initiation of YRO at San Francisco State.

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YRO Analysis for the California State Colleges (Continued)

We assumed that after this period there would be no incremental FTE additions in the summer quarter. Therefore, no facilities would be built after the ninth year, but the operating cost economies or diseconomies of the summer quarter would continue through the forty-eighth year.

2. Studies show that in the absence of YRO, 75% of the first year's projected summer enrollment, and 100% of the summer quarter increments thereafter, would have to be educated in the academic year. We assumed that the 25% FTE enrollment of the first year would be educated in a self-supporting summer session, and this number would remain constant through the 48 year period. We determined that the summer session enrollment at many campuses is saturated, and is not expected to increase significantly in the future.

3. Capital outlay per incremental FTE student at the State Colleges was assumed to be $6,800. This figure is from the work of R. V. Walen, previously cited in the University section.

4. Capital outlay in each year was represented by a 25 year bond at 3-1/2% interest, in the same manner as at the University.

5. Similar to the computation for the University, we assumed no lead time in providing new facilities for incremental FTEs.

6. For the number of FTEs that would have been educated in the summer session, we assumed the lost revenue to be $200/FTE, calculated at $13.50 per unit for 15 units.

7. The State Colleges are assumed to continue to offer full scope and breadth of courses in the summer quarter. This policy has been shown to lead to increased cost/FTE on some campuses. As summer quarter enrollment increases, the additional cost/FTE should be reduced since student/faculty ratios would come more into line with academic quarter student/faculty

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YRO Analysis for the California State Colleges (Continued)

ratios. However, the enrollment for the first nine years does not increase sufficiently to allow the State Colleges, segment-wide, to have the same economies as the University. Certain of the colleges, such as CSCH, have, or will have, attained operating economies, but we have conservatively assumed that the segment will not. We assumed the following schedule of increased cost/FTE on a segment-wide basis:

Increased Operating Cost Schedule for State Colleges

Year	Increased Operating Cost of Summer Quarter Per Annual FTE
1-5	$ 200
6-10	150
11-20	100
21-48	50

The computations of Exhibit XI are similar to those of the University, but with the preceding assumptions substituted. For the State Colleges, the total additional capital outlay for the non-YRO alternative is $281,354,000. Alternatively, the additional cost of educating the total incremental enrollment in summer quarters is $225,206,000. The savings incurred by YRO based on projections for the first nine years at the State Colleges is $56,148,000 (spread over 48 years). The net present value of these savings at the State Colleges is about $42,000,000. Therefore, we conclude that although fairly substantial savings can be produced by YRO at the State Colleges, savings are not as great as those projected for the University. The cumulative cash outlay savings are shown in the last column of Exhibit XI. After nine years they are about $12,000,000.

A comparison can be made between the savings at the University and those at the State Colleges. Although projected summer quarter enrollment at the State Colleges is almost twice that at the University,

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EXHIBIT XI

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COST COMPARISON OF THE YRO AND NON-YRO ALTERNATIVES
AT THE STATE COLLEGES
(000 Dollars)

	Year	Summer Quarter Enrollment (Annual FTES)	Incremental FTES for New Facilities	Capital Outlay Required	Total Cost of Non-YRO Alternative (Bond Payments)	Total Cost of YRO Alternative	Cumulative Savings of YRO
1	- 1967-68	3,417	2,563	$17,428	$ 1,307	$ 3,100	$ (1,793)
2		4,110	693	4,712	1,636	2,839	(2,996)
3		4,680	570	3,876	1,895	3,203	(4,304)
4		8,310	3,630	24,684	3,710	3,879	(4,473)
5		13,880	5,570	37,876	6,479	5,143	(3,137)
6		15,820	1,940	7,372	6,908	5,240	(1,469)
7		19,840	4,020	27,336	8,824	6,043	1,312
8		23,740	3,900	26,520	10,641	6,378	5,575
9	- 1975-76	30,150	6,410	43,588	13,700	7,339	11,936
10					13,429	7,339	18,026
11					13,158	5,832	25,352
12					12,887	5,832	32,407
13					12,617	5,832	39,192
14					12,346	5,832	45,706
15	- 1981-82				12,075	5,832	51,949
16					11,805	5,832	57,922
17					11,534	5,832	63,624
18					11,263	5,832	69,055
19					10,993	5,832	74,216
20					10,722	5,832	79,106
21					10,451	4,324	85,233
22					10,181	4,324	91,090
23					9,910	4,324	96,676
24					9,639	4,324	101,991
25	- 1991-92				9,367	4,324	107,034
26					8,399	4,324	111,109
27					7,965	4,324	114,750
28					7,570	4,324	117,996
29					6,349	4,324	120,021
30					4,634	4,324	120,331
31					4,193	4,324	120,200
32					2,963	4,324	118,839
33					1,804	4,324	116,319
34						4,324	111,995
35	- 2001-02					4,324	107,671
36						4,324	103,347
37						4,324	99,023
38						4,324	94,699
39						4,324	90,375
40						4,324	86,051
41						4,153	81,898
42						4,119	77,779
43						4,090	73,689
44						3,909	69,780
45						3,630	66,150
46						3,533	62,617
47						3,332	59,285
48	- 2014-15					3,137	56,148
	Total				$ 281,354	$225,206	
	Present Value (3½% Discount Rate)				$ 154,743	$112,501	

YRO Analysis for the California State Colleges (Continued)

the savings due to YRO are much less. There are two reasons for this result. First, the capital outlay per incremental FTE at the University is $13,000, whereas it is only $6,800 at the State Colleges. Because the University spends more per FTE for new facilities, it has more to save by deferring the need for these facilities.

A second reason for the reduced savings at the State Colleges is the increased operating cost/FTE in the summer quarter. A significant contribution to the savings of YRO could be made by reducing the scope and breadth of courses at certain campuses, and thereby reducing the summer quarter operating costs. Because we cannot predict its effect on summer quarter enrollment, we cannot recommend this procedure.

Since the margin of savings at the State Colleges is much less than at the University, similar changes in the assumptions produce different results. For example, the total additional cost/annual FTE of the YRO alternative would have to exceed $220 (for all 48 years) before the non-YRO alternative would become the better one.

The assumptions used in the State College segment computations are based on our knowledge of the experiences to date, and are somewhat more conservative than those of the University. We believe, however, that these assumptions are approximately correct and savings are incurred by YRO at the State Colleges, but not to as great an extent as at the University.

METHOD OF SELECTING CAMPUSES AND COLLEGES FOR CONVERSION TO YRO

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Selection of Campus and Colleges for Conversion to YRO

One of the critical problems associated with the YRO decision is the determination of which campuses and colleges should offer a summer quarter. The question that is frequently asked, is, "Is there a minimum annual enrollment, below which campuses should not offer a summer quarter?"

Our analysis of the problem shows that the size of enrollment at a campus is implicitly tied to the decision to offer a summer quarter at that campus. We believe that the YRO decision at a campus should be an investment decision carried out on a financial basis similar to the preceding analysis.

We recommend the following procedure for determining if an individual campus or college should offer a summer quarter.

Enrollment projections for both the YRO and non-YRO alternatives should be made at the campus. The campus should then prepare operating budgets for the academic year for both alternatives as well as a budget for the summer quarter. The total cost/FTE of the summer quarter is then computed, and it must include the following:

1. The total operating costs of the summer quarter;

2. The annual cycling costs;

3. The lost revenue of those summer quarter students who would have attended a summer session; and

4. The increased cost of educating students in the academic year under the YRO alternative.

The last cost listed needs further explanation. At certain campuses, drawing a significant number of students from the academic year to the summer quarter could increase the cost/FTE of the academic year, if the academic year enrollment does not increase fast enough. This is especially true at small campuses. If this does occur, the increased cost of the academic year must be considered a cost of the YRO alternative. This cost is determined by computing the increased cost/(annual FTE) and then multiplying by the number of annual FTEs.

The dollar values of the four cost elements are added together and divided by the projected summer quarter

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Selection of Campus and Colleges for Conversion to YRO (Continued)

enrollment. If this value of summer quarter cost/FTE is less than an academic quarter cost/FTE for the non-YRO alternative, the campus should offer a summer quarter regardless of capital outlay savings.

The preceding analysis computes the total cost of education for an FTE under the YRO alternative. When this is less than the cost under the non-YRO alternative, the YRO decision is better, without further application of the inevestment analysis. If the total cost/FTE of the summer quarter is greater than an academic quarter for a campus or college, there is no clear-cut decision. This campus or college must be treated as an individual case and the entire cost alternative analysis of this section must be performed.

SECTION III

CONVERSION PLANNING

We prepared a recommended plan for conversion of individual campuses from the semester system to a three quarter system and then to YRO. To help develop this plan, we surveyed the procedures utilized by several campuses which have already converted to the quarter system. In addition, we interviewed representatives of the Coordinating Council, the University of California and the State Colleges to obtain a variety of views regarding the essential elements of a successful conversion plan. Finally we added our own thoughts based on our findings during this study.

We have shown on the following pages, first, the general policies governing conversion planning. Secondly, we have presented our recommended plan for conversion of a typical college. We have then described the conversion experience at two campuses of the University, Berkeley and UCLA, and at California State College at Los Angeles. Finally, we have provided an analysis of conversion planning costs.

CONVERSION POLICIES

Conversion Policies

The Council staff believes, and we agree, that there are two basic requirements for successful conversion:

- An agressive academic policy that favors curricular reform, and

- An administrative policy that convinces the faculty of the advantages of conversion. The Council staff believes that a successful administrative policy must combine positive leadership with delegation of power to the faculty to implement the conversion.

The Council staff also believes that each campus and college should use the conversion opportunity to plan curricula that not only yield better utilization of plant and improve educational opportunities, but also improve business and administrative planning.

The University of California considered conversion to the quarter system an opportunity to improve and revise the basic structure of the educational program. The President's office made the following observations:

"1. Each campus and each department may wish to review its undergraduate program and make recommendations for curricular reform...."

"2. The University of California historically has not been in the forefront of educational experimentation. The change to the quarter system can provide an opportunity for encouraging experimental programs ranging from new patterns for majors to entirely new undergraduate curricula...."

"3. Each campus and each department should continue to plan for healthy diversity in its programs. The quarter system conversion can provide the opportunity to further educationally sound variations among the campuses and within each campus...."[1]

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[1]"New Calendar, New Directions. University of California 1966."

Conversion Policies (Continued)

To meet these goals, all campuses of the University were converted to the quarter system in the fall of 1966. The Berkeley campus offered a regular summer quarter in 1967, and UCLA offered one the following year. Planning for the conversion to the quarter system was delegated to the administration and faculty of each campus with the expectation that each would take the opportunity to completely examine its own curricula. A more complete description of the procedures used at Berkeley and UCLA follows below.

The State Colleges, while agreeing with YRO in principle, have been restrained in their support of the quarter system. At the individual colleges there has been doubt that the summer quarter will be adequately funded, or that it will be continued.[2] In addition, certain colleges believe that it is much more costly to operate in three quarters rather than two semesters.[3] Therefore, there has been resistance, at the campus level, to additional conversions to the quarter system.[4]

The Chancellor's office has not required that all colleges convert to the quarter system at one time. As a result, the conversion schedule is not based on a uniform policy. Several Colleges are scheduled to convert to the quarter system in a fall term while others are scheduled to convert to the quarter system and offer their first summer quarter simultaneously (see Exhibit XII).

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[2]"Faculty Issues," San Francisco State College, Vol. VII, No. 19, February 19, 1968. Page 3.

[3]Memorandum to A. Alan Post, Legislative Analyst, from W. B. Simpson, Associate Professor of Economics and Consultant for Academic-Fiscal Planning and Analytic Studies, CSCLA. Subject: Statement on Year-Round Quarter System Operation. January 5, 1968. Pages 16-23.

[4]"Faculty Issues," op, cit., page 4.

EXHIBIT XII

CURRENT SCHEDULE OF CONVERSION TO YEAR-ROUND OPERATIONS

FOR THE STATE COLLEGES

	Begin Planning	Conversion From Two Semesters To Three Quarters	Addition of Fourth Quarter Summer Quarter	Addition of Fourth Quarter Fiscal Year
Hayward (Q)	1964-65	-	1965	1964-65
Cal Poly-SLO (Q)	-	-	1966	1966-67
Cal Poly-KV (Q)	-	-	1966	1966-67
Los Angeles*	1964-65	1967-68	1967	1966-67
San Francisco	1966-67	1970-71	1970	1969-70
Humboldt*	1966-67	1967-68	1970	1969-70
San Fernando Valley	1969-70	1971-72	1972	1971-72
Fullerton	1969-70	1971-72	1972	1971-72
Chico	1969-70	1971-72	1972	1971-72
San Jose	1969-70	1971-72	1972	1971-72
Dominguez Hills (Q)	1971-72	-	1972	1971-72
Long Beach	1970-71	1972-73	1972	1971-72
San Bernadino (Q)	1972-73	-	1973	1972-73
Stanislaus*	1973-74	1965-66	1974	1973-74
Fresno	1972-73	1974-75	1974	1973-74
Sonoma	1972-73	1974-75	1974	1973-74
Sacramento	1973-74	1975-76	1975	1974-75
San Diego	1973-74	1975-76	1975	1974-75

* These colleges have already converted to the quarter system

(Q) These colleges began with a three-quarter operation and thus conversion is not necessary.

Note: Based on Trustee policy and Legislative action as of 7-11-68.

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RECOMMENDED CONVERSION PLANNING SCHEDULE

Recommended Conversion Planning Schedule

In the course of our investigations leading to a conversion plan, we found there were two basic conditions necessary for a successful conversion. They are strong and decisive leadership, and faculty involvement.

Strong leadership is necessary to dispel unfounded rumors and prevent urgent policy matters from lingering without decision. We believe that rumors, misunderstandings and, subsequently, low morale can result from a lack of positive commitment at the administrative level.

The conversion process consists of two parts: conversion from a two-semester calendar to a three-quarter calendar, and then the addition of a fourth quarter (YRO).

A successful conversion to the quarter system requires the full involvement of the faculty. The transition from one academic calendar to another is a major organizational change, which can promote unique opportunities for curricular examination and reform. This reform can best be implemented through normal academic channels and an involved faculty.

We noted, in our studies, that those campuses and colleges which minimized the number of special purpose committees and subcommittees had a smoother conversion experience. Special committees often do not have decision making responsibilities, and this reduces their effectiveness. We have, therefore, recommended that a YRO committee be formed at a campus or college only for the purpose of coordinating the efforts of those individuals and groups performing tasks within existing academic and administrative channels. This procedure not only requires faculty involvement, but maintains control in hands of those most experienced and most competent to make important decisions: the individual departments and divisions.

Exhibit XIII is a Gantt-type chart of a conversion plan which spans a period of two years from formation of the committee to initiation of the first quarter.[5] We believe

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[5]Adapted and modified from a similar chart in Progress Report on Pilot Conversion Program, CSCLA, Year-round Study Committee, March 3, 1966.

EXHIBIT XIII

SEQUENCE OF OPERATIONS FOR CONVERSION PLANNING

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1. Draft college calendar for fall, winter, spring quarters

   Formation of YRO Committee

2. Determine policy on study loads, variable unit courses, contact hours vs. credit hours

3. Determine faculty teaching loads

4. Prepare curriculum guide lines and rules

5. Departments revise curriculum and submit course proposals

6. Prepare and issue prototype catalog to all departments and administrators

7. All individuals receiving prototype catalog review course offerings

8. Revise prototype catalog and distribute to all departments and other interested parties, including junior colleges and high schools

9. Prepare final revised edition of catalog for printing

   Final catalog copy to printer

10. Advise students and rewrite programs

    Beginning of first academic quarter

11. Make service staff work load studies to determine extent of cycling costs

12. Computerize record system-

    a. Work flow analysis

    b. Systems analysis and programming

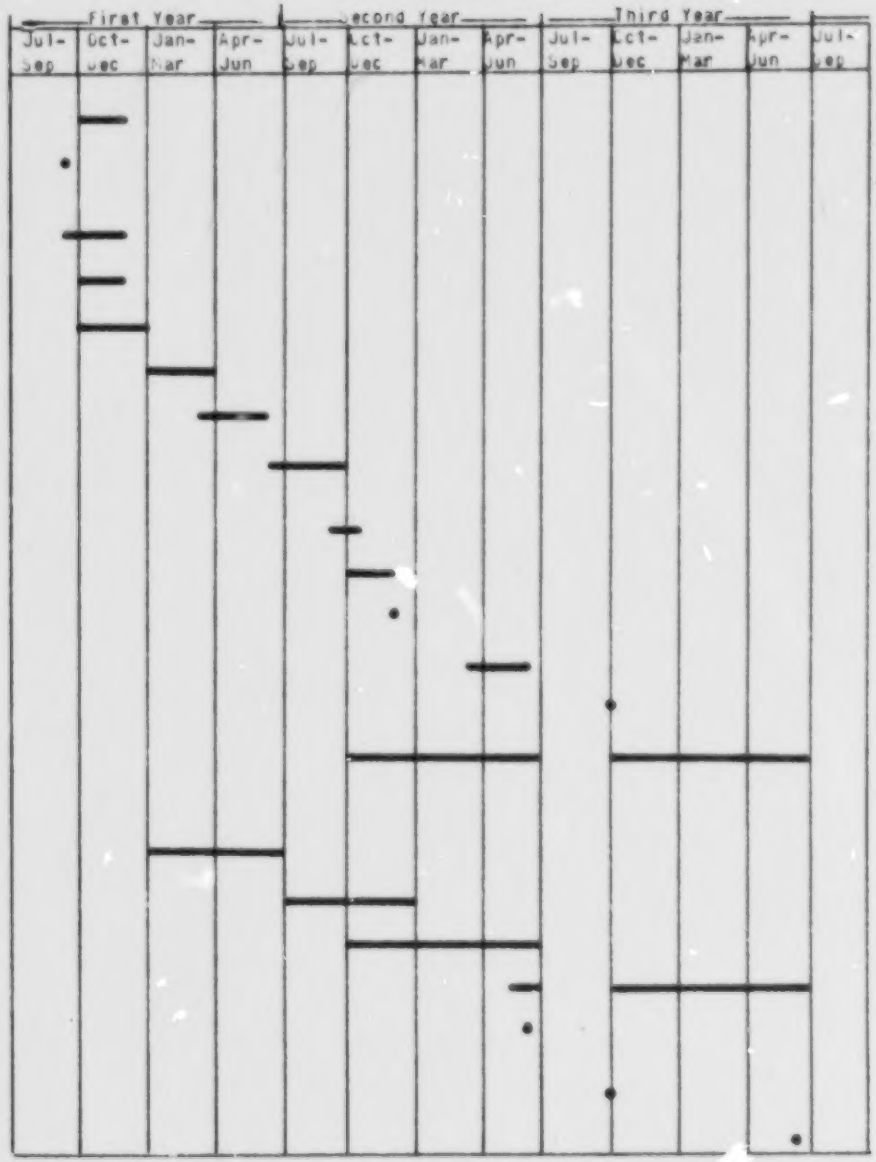
13. Introduce pre-registration system (if not already in effect)

14. Commence planning for first summer quarter

    Publish preliminary list of first summer quarter course offerings

    Begin advertising for summer quarter-encourage students to plan programs to include summer courses

    Beginning of first regular summer quarter



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Recommended Conversion Planning Schedule (Continued)

that the first quarter of operation should be offered a minimum of one academic year before the first regular summer quarter. This then, separates the two problems, conversion and YRO, and provides at least three quarters of experience with the quarter system before the first summer quarter is started. Planning for the summer quarter then becomes a simple extension of the curricular planning for the academic year.

The tasks listed in Exhibit XIII are concentrated in the area of curricula reform. Conversion plans at certain of the State Colleges have, however, included a number of other tasks, such as calendar studies, student attitude sampling, and faculty benefit studies. We believe there is now a reduced need for special studies of this type. There is no longer a need to compare the quarter system calendar with any other type of calendar. Many readily available reports have been written about the conversion experiences at schools such as Pennsylvania State University, the University of Chicago, and Wayne State University. Also, there have been enough conversion experiences in the State of California, to date, to enable converting campuses to sample a broad range of experience.

Several of the campuses and colleges that have already converted have performed sample studies of student attitudes. We believe there is no longer a need to sample the student attitude at a college about to convert.

A number of studies have been performed in which the relation between semester credit units and quarter credit units have been analyzed in detail. Colleges that are to convert in the future should avail themselves to these studies and forego their own studies.

The individual colleges of the State College system have been very concerned with faculty benefits and faculty teaching loads. A number of studies have been performed which analyze pension plans and sabbatical leave plans as they change when a college converts from the semester system to the quarter system. This appears to be a segment-wide problem and not a unique problem to any one college. Since this problem has been analyzed in great detail, studies should be limited to a statement of the results. The Chancellor's office could alleviate misunderstandings in this area by emphasizing previously stated policy relating to these matters.

Recommended Conversion Planning Schedule (Continued)

Several of the large State Colleges have received permission to plan conversion over a three-year period. We believe this is a needlessly long period of time, since a number of the basic studies need not be repeated, and since conversion to the quarter system will be separated from YRO. The conversion planning schedule of Exhibit XIII indicates that the efforts of the faculty will be concentrated in the all-important area of curricular planning.

Several campuses and colleges that have alread converted have used a prototype catalog of course offerings in the new quarter system as a means of improving communication during the conversion process. A prototype catalog allows interested parties to review and suggest revisions to the course scheduling and content before the final edition is assembled for the printer. In this way, the departments and the counselors of prospective students will have available an approximation of the final catalog long before the official catalog itself is available.

We believe that general budgeting formulas cannot be applied to all colleges equally. We have included in the conversion plan a two-year work load study of the service departments to realistically budget cycling costs at each college. The program covers the academic year just prior to conversion and the academic year immediately after conversion. Through the application of industrial engineering techniques, each college will be able to provide support for increased funding to cover cycling costs. The inclusion of a work load study at a specific college will depend on the magnitude of expected cycling costs. Smaller colleges will probably not generate enough cycling costs to warrant a work load study.

Several of the campuses and colleges have been able to combat increased student advising time by introducing one-a-year advising in a preregistration procedure. We believe this is a commendable practice and recommend it for all colleges about to convert, assuming it is academically acceptable.

Once the first quarter term has begun, attention may be turned toward planning for the first summer quarter. This will be a simple extension of the conversion experience.

A major function of the summer quarter planning will be the attraction of students to that quarter. This effort can be aided by early and positive statements about summer

Recommended Conversion Planning Schedule (Continued)

quarter scheduling. This should be started before the start of the quarter system with the publishing of a tentative list of summer quarter courses, so that students have adequate time to adjust their schedules to include these courses. Student enrollment in the summer quarter can be approximated by questioning all students during the academic year registrations. Once a reasonably accurate summer quarter enrollment projection is obtained, the scope and breadth of course offerings, faculty requirements, and budget requests can be planned.

CONVERSION EXPERIENCE AT THE UNIVERSITY OF CALIFORNIA, BERKELEY

Conversion Experience at the University of California, Berkeley

Conversion to the quarter system at Berkeley began in November, 1963, when Chancellor Strong appointed the Committee on Year-round Operations. In subsequent months the Committee (herein called CYRO) led various campus groups in discussions about academic matters and year-round operations. The discussions led to the development of a set of general policies which governed the conversion to the quarter system. One significant policy adopted at Berkeley stated that the conversion to the quarter system would be accomplished within the normal workload of the faculty. It was determined that conversion fell within the definition of normal academic planning.

The entire conversion planning process required a period of three years. The major milestones in the conversion procedure were:

August 1964 - CYRO issued a complete set of guidelines, under Chancellor Strong's signature, to the deans and department chairmen. The guidelines were issued after CYRO had surveyed the departments on matters such as study load, variable unit courses, contact hours vs. credit hours, etc. They included schedules, general conversion guidelines, general budget information, guidelines for certain staffing problems, and suggestions for improving classroom utilization. The guidelines were also devised to encourage serious curricula revision and to eliminate rumors concerning the conversion.

December 1964 - preliminary course proposals were submitted by all departments.

Winter 1964 - the preliminary course proposals were checked against the guidelines and were returned to the departments along with review results and recommendations.

March 1965 - revised course proposals were received from the departments for use in developing the 1966-67 prototype catalog.

May 1965 - the first prototype catalog was distributed to departments within the Berkeley campus and to the campus and University administrators. Each individual receiving a copy of the prototype catalog was expected to review the course offerings and revision of curricula. This review continued through the summer of 1965.

Conversion Experience at the University of California, Berkeley (Continued

September 1965 - a revised edition of the prototype catalog was distributed to all departments and administrators in the University, and was also widely distributed to high schools, junior colleges and state colleges.

December 1965 - this was the target date for receipt of final revision to the prototype catalog and the preparation of copy for the official 1966-67 Berkeley catalog.

The end result of the conversion planning process at Berkeley was expected to be the most thorough-going re-appraisal of course and curricula ever attempted on that campus.

Since Berkeley decided that conversion planning would be accomplished within the normal faculty workload, the majority of the Berkeley budget was allocated to financing special studies, such as:

- Projected enrollment and teaching load - department by department estimates of total lower division, upper division, and graduate student credit hours were prepared by the departments.

- Studies of departmental course proposals - all departmental course proposals were analyzed for consistency with established policy guidelines, and special studies were made of the proposed distributions of courses by units and by contact hours.

- Student attitudes - The Office of Institutional Studies conducted two major studies to determine the probable reaction of students to the quarter system and especially to the availability of a summer quarter.

CONVERSION EXPERIENCE AT THE UNIVERSITY OF CALIFORNIA, LOS ANGELES

Conversion Experience at the University of California, Los Angeles

UCLA completed its conversion in a shorter period of time than Berkeley. The planning phase of the conversion covered the period from September, 1964 to December, 1965. The first quarter began in September 1966.

A conversion conference was held in September, 1964, under the direction of the then Chancellor, Franklin Murphy. Chancellor Murphy emphasized the importance of the curriculum change that was about to be undertaken, and the lasting effects it would have on the quality of education offered at UCLA. He said there were two principles that he considered essential to the goal of an educationally sound, and workable, program. The first of these principles was simplicity, and the second, flexibility. Simplicity referred to the mass of administrative detail that was jeopardizing the academic effort, and flexibility referred to academic programs that meet the need of differing patterns of students. Chancellor Murphy stressed the importance of applying these two fundamentals in the re-structuring of the academic program.

A report containing a set of initial conversion guidelines, as well as certain information designed to eliminate rumors, was issued over the signature of Vice Chancellor Foster Sherwood. The report also included a number of decisions concerning administrative policy such as faculty teaching loads, student mix, and general academic support.

A schedule for planning was presented as follows:

January 1965 - preliminary recommendations from departments regarding course descriptions that would represent a rough draft of the new catalog.

June 1965 - final revision of catalog copy by departments for submission to college and senate bodies.

December 1965 - submission of final copy to printer.

May 1966 - distribution of catalog and bulletin materials for advising.

September 1966 - enrollment in first year of quarter system.

A number of other problem areas were suggested in the guidelines, but no definite dates or procedures for solving them were included. These problem areas included:

Conversion Experience at the University of California, Los Angeles

- Calendar and teaching days per term;
- Revised sabbatical privileges under the quarter system;
- Salary supplementation from extra research contracts; and
- Responsibilities of academic administrative offices throughout the year.

Much of the administrative work involved in converting UCLA to the quarter system was carried on by standing committees in the Academic Senate. In addition, seven faculty members were given summer salaries and the assistance of teaching assistants, to help offset time spent in conversion planning. Funds for this purpose, plus additional expenses for meetings, publications, etc., constituted the primary use of conversion planning funds allocated to the UCLA campus. Little or no funds were allocated for special studies.

CONVERSION EXPERIENCE AT CALIFORNIA STATE COLLEGE, LOS ANGELES

Conversion Experience at California State College, Los Angeles

California State College at Los Angeles (CSCLA) was the first of the large State Colleges to convert from the semester to the quarter system.

Conversion planning began in the fall of 1964 with the formation of a year-round study committee consisting of faculty members partly relieved of teaching obligations.

The year-round study committee set up eleven subcommittees to study and make recommendations to the Academic Senate on the following problem areas:

1. The college calendar.
2. Comparison of quarter calendar and semester calendar workload.
3. Admissions office and records and registration system.
4. Faculty affairs.
5. Curriculum organization, course description rewriting and course scheduling.
6. Budget planning and cost projections.
7. Summer session - summer quarter coordination.
8. Plant operation - capacity and utilization.
9. Academic policies.
10. Library.
11. Student affairs.

Each school or division of the college also assigned a coordinator for conversion, with some released time. The coordinators worked together with the curriculum committee of the Academic Senate, whose function it was to publish school guidelines and to approve departmental and inter-departmental programs.

The general schedule for conversion planning at CSCLA called for the 1964-65 academic year to be used for study and determination of policy guidelines. General guidelines were adopted by the Academic Senate in the Spring of 1965. The 1965-66 year was to combine study, policy refinement and the conversion of the curricula. The entire study phase of the program was completed by June 30, 1966 at which time the year-round committee was disbanded.

Conversion Experience at California State College, Los Angeles (Continued)

The 1966-67 academic year was expected to include the completion of the new curricula, publication of the catalog and class schedules, conversion of records and students programs including extensive student counselling, and the scheduling of faculty and students into the 1967 summer quarter.

CONVERSION COST EXPERIENCE

Conversion Cost Experience

Conversion costs are the one-time costs associated with conversion planning. They are relatively modest compared to other expenditures associated with YRO. However, the disparity of conversion costs between campuses should be examined. Exhibit XIV displays the actual expenditures for conversion planning and conversion at the three large campuses where conversion to the quarter system has already taken place. Berkeley, UCLA, and CSCLA.

As stated previously, Berkeley determined that conversion planning would be accomplished within the normal workload of the faculty, and little or none of the conversion budget was for faculty release time. The majority of the budgeted funds were allocated to non-academic staff for special studies, and for out-of-pocket expenses.

The UCLA budget was allocated as follows: 20% for academic salaries, 35% for non-academic salaries, and 45% for out-of-pocket expenses, the majority of which consisted of printing costs. The academic salaries were used to provide release time for seven faculty members who spent a significant portion of their time on conversion planning. Non-academic salaries provided teaching assistants and other clerical aid to these special studies at UCLA.

The majority of the conversion budget at CSCLA was allocated for faculty release time. Of the total, 25% provided release time to allow for general conversion planning, 35% provided release time for student counselling and advising, 22% provided release time for curricular revision, and 18% was used for non-academic salaries to change student records to the quarter system. A number of special studies were included in the budget for general conversion planning, since CSCLA had been designated a pilot study college by the Chancellor's Office.

CSCLA considered the first two years' budgets (1964-65 and 1965-66) to be conversion planning funds and then the 1966-67 budget to be conversion funds. The University made no such distinction, and considered all funds spent prior to actual initiation of the quarter system as conversion planning funds.

Of the $299,000 in conversion funds budgeted at CSCLA, $146,000 was spent for advising and counselling students on their program changes.[6] Most of this amount provided faculty release time. The University considered all

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[6] Budget Office, Los Angeles State.

EXHIBIT XIV

CONVERSION PLANNING COSTS

Budget Year	Berkeley[1]	UCLA[2]	CSCLA
1964-65	$ 42,490	$ 72,091	$ 43,543[4]
1965-66	79,585	76,529	98,722[4]
1966-67	318	0	298,735
	$122,393	$148,620	$441,000[3]

[1]Budget Analyst, University of California, Berkeley.

[2]Chancellor's Office, UCLA.

[3]Budget Officer, CSCLA.

[4]Governor's Budgets, 1966-67 and 1967-68.

Conversion Cost Experience (Continued)

student counselling a normal part of the faculty work-load and no additional funds were budgeted. The advising problem was simplified at the University by adopting a policy of favoring the student in any legitimate program conflict, and also by greatly simplifying the rules and procedures in program changes.

We believe that the great amount of time spent counselling students at CSCLA is of questionable value; the desired results could be attained equally well with a carefully written manual for the students. Conversion budgets at other colleges should be examined to avoid the inclusion of excessive funds for student counselling.

EXHIBITS

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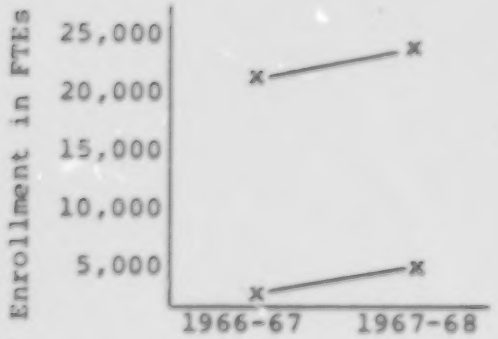
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

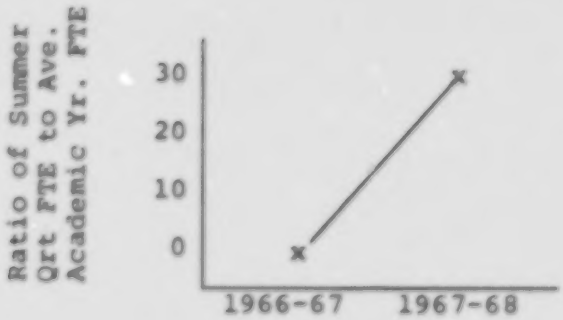
UNIVERSITY OF CALIFORNIA AT LOS ANGELES

	1966-67	1967-68
Summer Quarter FTE		
Enrollment	-0-	6,877
Growth Over Prior Year		6,877
Average Academic Year FTE		
Enrollment	22,062	24,232
Growth Over Prior Year		2,170
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		4,707

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in %) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data supplied directly by the University of California at Los Angeles

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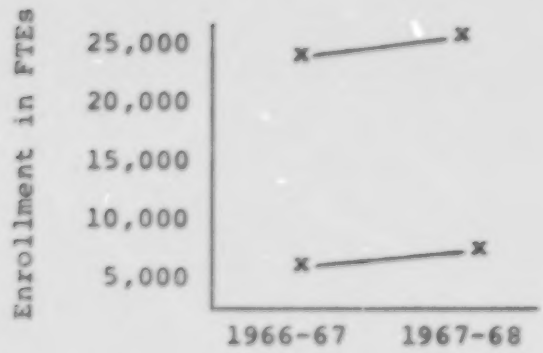
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

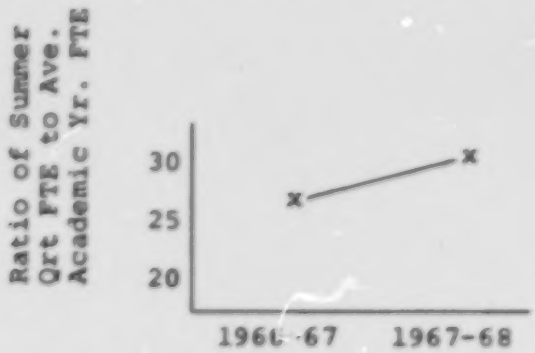
UNIVERSITY OF CALIFORNIA AT BERKELEY

	1966-67	1967-68
Summer Quarter FTE		
Enrollment	6,699	8,086
Growth Over Prior Year		1,387
Average Academic Year FTE		
Enrollment	24,599	26,306
Growth Over Prior Year		1,707
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		(320)

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in %) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data by the Office of Institutional Research, Berkeley

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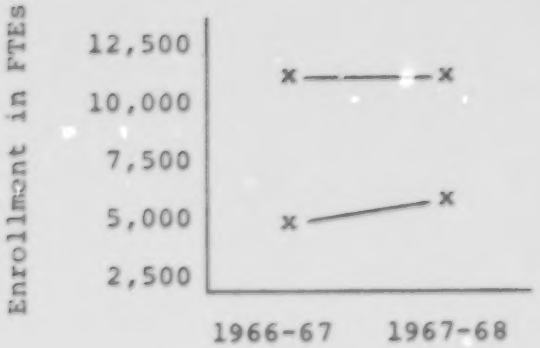
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

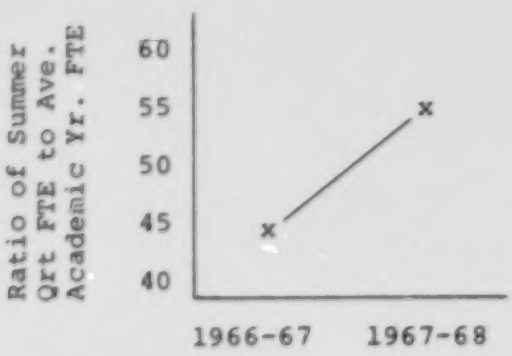
CALIFORNIA STATE COLLEGE AT LOS ANGELES

	1966-67	1967-68
Summer Quarter FTE		
Enrollment	5,367	6,660
Growth Over Prior Year		1,293
Average Academic Year FTE		
Enrollment	11,934	12,415
Growth Over Prior Year		481
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		812

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in%) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data by the Office of the Chancellor, California State Colleges

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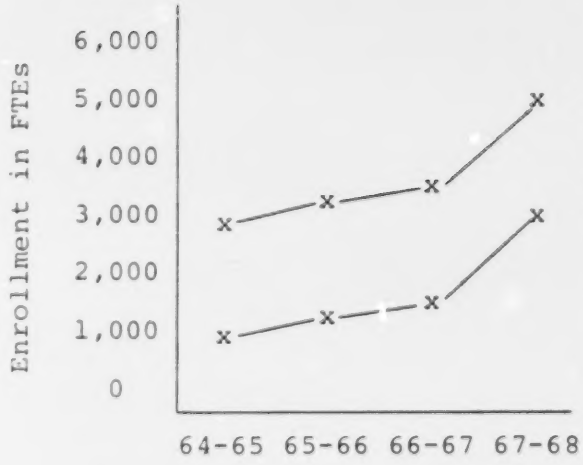
EXHIBIT I

ANALYSIS OF ENROLLMENT DATA

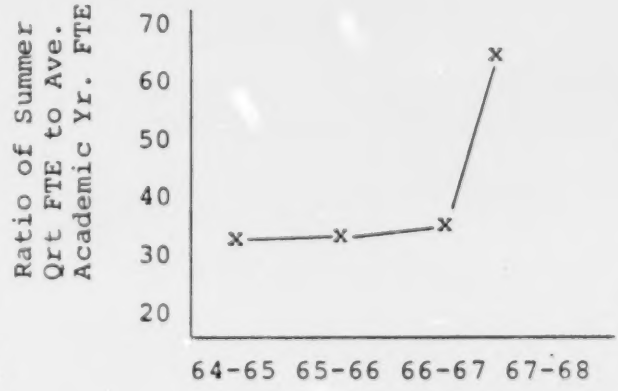
CALIFORNIA STATE COLLEGE AT HAYWARD

	1964-65	1965-66	1966-67	1967-68
Summer Quarter FTE				
Enrollment	981	1,295	1,779	3,418
Growth Over Prior Year		314	484	1,639
Average Academic Year FTE				
Enrollment	2,860	3,862	4,585	5,253
Growth Over Prior Year		1,002	723	668
Excess or (Deficiency) of Absolute Summer Quarter Growth over Average Academic Year Growth in Enrollment		(668)	(239)	971

Plot of Enrollment Trends For Summer Quarter and Average Academic Year



Plot of Trend of Ratios (in %) Of Summer Quarter Enrollment FTE To Average Academic Year FTEs



x - Basic data by The Office of the Chancellor, California State Colleges

EXHIBIT II

EFFECT OF ACCELERATION, SPREAD, AND SHIFT ON DISTRIBUTION OF STUDENT CREDIT HOURS BY QUARTER

Basic Assumptions:

1. Normal student load is 15 student credit hours (SCH)/quarter.

2. Requirement for a degree - 180 SCH.

Quarter	"Normal" Student	Acceleration	Shift	Spread
1 Fall	15 SCH	15 SCH	15 SCH	12 SCH
2 Winter	15	15	15	12
3 Spring	15	15	--	12
4 Summer	--	15	15	12
5 Fall	15	15	15	12
6 Winter	15	15	15	12
7 Spring	15	15	--	12
8 Summer	--	15	15	12
9 Fall	15	15	15	12
10 Winter	15	15	15	12
11 Spring	15	15	--	12
12 Summer	--	15	15	12
13 Fall	15	--	15	12
14 Winter	15	--	15	12
15 Spring	15	--	--	12
16 Summer	--	--	15	--
	180	180	180	180

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EXHIBIT III

MAJOR OPERATING COSTS AT THE STATE COLLEGES

CSC Hayward[1,2] 1965-66	Academic Year	% of Total	Summer Quarter[7]	% of Total
General & Administrative	$ 332,747[1]	6.76%	$ 19,460	4.30%
Library	404,579	8.22	10,260	2.30
Plant Operation	675,620	13.73	16,308	3.66
Student Services	487,617	9.91	44,619	10.02
Instruction	3,019,948	61.37	354,544	79.63
Total	$ 4,920,511	99.99%	$ 445,191	99.98%

CSC Los Angeles[3,4] 1968-69	Academic Year	% of Total	Summer Quarter[5]	% of Total
General & Administrative	$ 1,351,398	6.73%	$ 88,050	2.81%
Library	1,241,548	6.19	-0-[6]	-0-
Plant Operation	1,990,665	9.92	87,546	2.80
Student Services	1,376,042	6.86	150,640	4.81
Instruction	14,112,323	70.03	2,805,743	89.58
Total	$20,071,976	99.73%	$ 3,131,979	100.00%

[1]Governor's Budget 1965-66.

[2]Excludes reimbursements and includes estimated salary savings.

[3]Governor's Budget 1968-69

[4]Excludes reimbursements and estimated salary savings.

[5]This is not the calendar summer quarter, but the summer quarter of the 1968-69 budget year. Cycling costs of $444,002 have been removed from this budget.

[6]A reduction in previously authorized personnel caused this figure to be zero.

[7]This is the summer quarter budget for the 1965-66 budget year.

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EXHIBIT IV

COST COMPARISON

BETWEEN SUMMER QUARTER AND ACADEMIC YEAR QUARTER

	Actual Cost/FTE
California State College at Los Angeles	
Academic Year 1968-69 [1]	
$\frac{\$16,136,692}{13,880 \text{ FTEs}}$ [2] = $1,169/FTE/Year	
Average cost per academic year quarter	$ 390/FTE
Summer Quarter 1968 (budget year basis, with actual 1968 enrollment)	
$\frac{\$ 3,131,979}{6,660 \text{ FTEs}}$	$ 470/FTE
Cost of summer quarter greater than costs of academic year quarter	$ 80/FTE
California State College at Hayward	
Academic Year 1965-66 [3]	
$\frac{\$ 4,329,264}{3,862 \text{ FTEs}}$ = $1,121/FTE/Year	
Average cost per academic year quarter	$ 374/FTE
Summer Quarter 1965 (calendar basis) [4]	$ 327/FTE
Cost of summer quarter less than costs of academic year quarter	$ 47/FTE

1 The total operating cost is the same as shown in Exhibit II, but estimated reimbursements have not been deducted.

2 Memo to State College Presidents from Raymond A. Rydell, Executive Vice Chancellor, California State Colleges. Subject: Projected Annual Full-Time Students 1968-69 to 1967-68 (Support Budget), February 5, 1968.

3 1965-66 Governor's Budget (actual enrollment, including reimbursements.

4 Memo to Dr. Fred Harcleroad, Pres., Hayward State, from Richard Vr Meer, Consultant of Year-Round Operations, March 20, 1966.

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EXHIBIT IV

COST COMPARISON

BETWEEN SUMMER QUARTER AND ACADEMIC YEAR QUARTER

	Budget	Actual [2]
University of California at Los Angeles [1]		
Academic Year 1968-69 Average Cost Per Quarter	$592/FTE	$592/FTE
Summer Quarter 1968	$442/FTE	$586/FTE
Costs of summer quarter less than costs of academic year quarter	$150/FTE	$ 6/FTE

	Budget	Actual
University of California at Berkeley		
Academic Year, Average Cost Per Quarter		
1967-68	$592/FTE	$592/FTE
1968-69	$573/FTE	$573/FTE
Summer Quarter		
1967	$407/FTE	$627/FTE
1968	$426/FTE	$415/FTE
Cost of summer quarter less or (more) than costs of academic year quarter		
1967-68	$185/FTE	($ 35/FTE)
1968-69	$147/FTE	$158/FTE

[1] Budget Office, University of California, July 25, 1968.

[2] Academic year actual cost/FTE is assumed equal to the budgeted cost/FET. Summer quarter actual cost/FTE is the budgeted cost directed by the actual enrollment.

EXHIBIT V

ANALYSIS OF CYCLING COSTS

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Kind of Cost	CSC-Los Angeles[4] 1967-68	CSC-Los Angeles[4] 1968-69[1]	CSC Hayward[5] 1968-69	UC Berkeley[6] 1967-68	UC Los Angeles[7] 1966-67
General administration					
Personal services	$ 16,917	$ 17,464	$ 4,800	$ -	$ 17,376
Operating expenses	19,980	20,723	-	-	2,225
Total	36,897	38,187	4,800	-	19,601
Instruction					
Personal services	247,874[2]	306,153	54,667	-	-
Operating expenses	78,713	20,025	-	-	-
Total	326,587	326,178	54,667	-	-
Library					
Personal services	-	-	-	16,631	-
Operating expenses and equipment	-	-	-	-	-
Total	-	-	-	16,631	-
Student services					
Personal services	74,183	84,134	22,500	13,572	48,274
Operating expenses	10,987	10,245	5,394	-	4,250
Total	85,190	94,379	27,894	13,572	52,524
General institutional services					
Personal services	-	-	-	-	4,344
Special item: Publication costs	-	-	-	-	15,000
Total	-	-	-	-	19,344
Total Estimated Salary Savings	(6,128)[3]	(14,742)[3]	(3,281)		
Net Total Cycling Costs	$442,526	$444,002	$84,080	$ 30,023	$ 91,469

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EXHIBIT V

ANALYSIS OF CYCLING COSTS

Sources

[1] One salary increase over 1966-67 is included in personal services for 1967-68 and 1968-69. Personal services for 1967-68 and 1968-69 are on the same salary base.

[2] Of this total amount, approximately $55,000 was for instructional administration which is referenced in the narrative preceding this schedule. Figures for instructional administration are taken from sources 4, 5, 6, & 7.

[3] Salary savings are estimated during the current year (1967-68) at 2%, while they are estimated at 4% for the budget year (1968-69).

[4] Various budget notes, analysis and recommendations on supplementary quarter system and year-round operations budget, 1967-68, and discussions with accounting and budgeting personnel at CSCLA.

[5] From conversations with budgeting and accounting personnel at CSCH and the special budget augmentation for 1968-69 cycling costs.

[6] Budget Analyst, University of California, Berkeley.

[7] Office of the Chancellor, UCLA, 1966-67, Supplemental Budget Request, May 17, 1965.

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EXHIBIT VI

COMPARISON OF SUPPORT BUDGETS FOR 1966-67 - BERKELEY AND CALIFORNIA STATE COLLEGE AT LOS ANGELES

UC Berkeley

Supporting funds are budgeted at the rate of $5,125 per FTE faculty.[1]

CSCLA[2]

Authorized faculty[3] - 830.6 including 40.4 administrative faculty.

Technical/clerical instructional)	$ 942,494
Estimated staff benefits (10.3%)	9,708
Operating expenses (instructional)	534,142
Equipment	165,056
Total	$ 1,650,400

Support allowance" is $1,650,400 ÷ 830.6 or $1,986[4] per FTE faculty.

[1] Berkeley Campus, Budget Estimate: 1967 Summer Quarter, Narrative Summary of Proposals, page 2.

[2] Governor's Support and Local Assistance Budget for Fiscal Year July 1, 1966 to June 30, 1967.

[3] This includes substitute faculty, sabbatical leave positions, etc. and is therefore somewhat greater than instructional faculty.

[4] The inclusion of the amount of cycling costs for 1967-1968, $272,000 which excludes approximately $55,000 of instructional administrative positions, raises this to approximately $2,314 per FTE faculty.

EXHIBIT VII

STATE COLLEGE ENROLLMENT PROJECTIONS, 1968-69 - 1976-77

	Total Annual FTEs (8 a.m.-5 p.m.)[1] (Academic Year)	Enrollment Increment (FTEs)	Summer Quarter FTEs[2] (Annualized)[3]	Total Annual Enrollment (FTEs)	Total Enrollment Increment (FTEs)
1968-69	139,220		4,110	143,330	
1969-70	150,290	11,070	7,480[4]	157,770	14,440
1970-71	161,790	11,500	8,310	170,100	12,330
1971-72	172,550	10,760	13,880	186,430	16,330
1972-73	183,850	11,300	15,820	199,670	13,240
1973-74	194,610	10,760	19,830	214,440	14,770
1974-75	205,140	10,530	23,740	228,880	14,440
1975-76	214,600	9,460	30,130	244,730	15,850
1976-77	224,950	10,350	32,930	257,880	13,150

[1]Rydell, December 19, 1967, op. cit.

[2]Memo to State College Presidents from Raymond A. Rydell, Executive Vice Chancellor, the California State Colleges. Subject: Projected Annual Full Time Equivalent Students 1968-69 to 1977-78 (Support Budget). February 5, 1968.

[3]The annualized summer quarter enrollment (FTEs) is equal to one-third of the summer quarter enrollment (FTEs).

[4]This enrollment value assumes San Francisco State College will convert to YRO in the summer of 1969. However, later information reveals that this conversion has been delayed until the summer of 1970. The updated projection is included in Exhibit XI.

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EXHIBIT VIII

ENROLLMENT PROJECTIONS FOR LOS ANGELES STATE, 1968-69 - 1976-77

	Annual FTEs (8 a.m.-5 p.m.)[1] (Academic Year)	Enrollment Increment (FTEs)	Summer Quarter FTEs[2] (Annualized)	Total Annual Enrollment (FTEs)	Total Enrollment (Increment (FTEs)
1968-69	11,500		2,080	13,580	
1969-70	12,170	670	2,190	14,360	740
1970-71	12,840	670	2,360	15,200	840
1971-72	13,580	740	2,470	16,050	850
1972-73	14,130	550	2,640	16,770	720
1973-74	14,680	550	2,670	17,350[3]	580
1974-75	15,210	530	2,770	17,980	630
1975-76	15,760	550	2,870	18,630	650
1976-77	16,290	530	2,980	19,270	640

[1]Rydell, December 19, 1967, op. cit.

[2]Rydell, February 5, 1968, op. cit.

[3]The present ceiling limit for Los Angeles State is 16,900 FTEs.

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EXHIBIT IX

TOTAL COST OF THE TWO ALTERNATIVES

OF THE SAMPLE PROBLEM

Year	Non-YRO Alternative[1] (Building Student Facility)	YRO Alternative (Operating a Summer Quarter)
1	$ 450	$ 200
2	440	
3	430	
4	420	
.	.	
.	.	
.	.	
23	230	
24	220	
25	210	
26	210	
27	0	
.	|	
.	|	
.	|	
40	0	200
	$8,250	$8,000
Present Value (5% Discount Rate)	$5,000	$3,432

[1]Represents a $5,000 bond retired in equal annual installments for 25 years, plus 5% interest on the amount outstanding.

TOUCHE, ROSS, BAILEY & SMART

EXHIBIT A

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COST COMPARISON OF THE YRO AND NON-YRO ALTERNATIVES
AT THE UNIVERSITY
(000 Dollars)

	Year	Summer Quarter Enrollment (Annual FTES)	Incremental FTES for New Facilities	Capital Outlay Required	Total Cost of Non-YRO Alternative (Bond Payments	Total Cost of YRO Alternative	Cumulative Savings of YRO
1	- 1967-68	2,380	1,785	$23,205	$ 1,740	$ 1,495	$ 245
2		7,055	4,675	60,775	6,266	960	5,551
3		9,114	2,059	26,767	8,155	1,063	12,643
4		11,066	1,952	25,376	9,903	607	21,939
5		12,240	1,174	15,262	10,857	607	32,189
6		13,637	1,397	18,161	12,007	607	43,589
7		14,569	932	12,116	12,678	(122)	56,389
8		15,536	967	12,571	13,367	(170)	69,926
9	- 1975-76	16,128	592	7,696	13,673	(1,006)	84,605
10					13,390	(1,006)	99,001
11					13,107	(1,006)	113,114
12					12,825	(1,006)	126,945
13					12,542	(1,006)	140,493
14					12,259	(1,006)	153,758
15	- 1981-82				11,977	(1,006)	166,741
16					11,694	(1,006)	179,441
17					11,411	(1,006)	191,858
18					11,129	(1,006)	203,993
19					10,846	(1,006)	215,845
20					10,563	(1,006)	227,414
21					10,281	(1,006)	238,701
22					9,998	(1,006)	249,705
23					9,715	(1,006)	260,426
24					9,433	(1,006)	270,865
25	- 1991-92				9,149	(1,006)	281,020
26					7,938	(1,006)	289,964
27					5,257	(1,006)	296,227
28					4,022	(1,006)	301,255
29					2,879	(1,006)	305,140
30					2,177	(1,006)	308,323
31					1,381	(1,006)	310,710
32					811	(1,006)	312,527
33					319	(1,006)	313,852
34						(1,006)	314,858
35	- 2001-02					(1,006)	315,864
36						(1,006)	316,870
37						(1,006)	317,876
38						(1,006)	318,882
39						(1,006)	319,888
40						(1,006)	320,894
41						(768)	321,662
42						(300)	321,962
43						(95)	322,057
44						101	321,956
45						218	321,738
46						358	321,380
47						451	320,929
48	- 2014-15					548	320,381
	Total				$ 233,749	($26,632)	
	Present Value (3⅛% Discount Rate)				$177,755	($9,907)	

TOUCHE, ROSS, BAILEY & SMART

EXHIBIT XI

COST COMPARISON OF THE YRO AND NON-YRO ALTERNATIVES
AT THE STATE COLLEGES
(000 Dollars)

	Year	Summer Quarter Enrollment (Annual FTES)	Incremental FTES for New Facilities	Capital Outlay Required	Total Cost of Non-YRO Alternative (Bond Payments)	Total Cost of YRO Alternative	Cumulative Savings of YRO
1	1967-68	3,417	2,563	$17,428	$ 1,307	$ 3,100	$ (1,793)
2		4,110	693	4,712	1,636	2,839	(2,996)
3		4,680	570	3,876	1,895	3,203	(4,304)
4		8,310	3,630	24,684	3,710	3,879	(4,473)
5		13,880	5,570	37,876	6,479	5,143	(3,137)
6		15,820	1,940	7,372	6,908	5,240	(1,469)
7		19,840	4,020	27,336	8,824	6,043	1,312
8		23,740	3,900	26,520	10,641	6,378	5,575
9	1975-76	30,150	6,410	43,588	13,700	7,339	11,936
10					13,429	7,339	18,026
11					13,158	5,832	25,352
12					12,887	5,832	32,407
13					12,617	5,832	39,192
14					12,346	5,832	45,706
15	1981-82				12,075	5,832	51,949
16					11,805	5,832	57,922
17					11,534	5,832	63,624
18					11,263	5,832	69,055
19					10,993	5,832	74,216
20					10,722	5,832	79,106
21					10,451	4,324	85,233
22					10,181	4,324	91,090
23					9,910	4,324	96,676
24					9,639	4,324	101,991
25	1991-92				9,367	4,324	107,034
26					8,399	4,324	111,109
27					7,965	4,324	114,750
28					7,570	4,324	117,996
29					6,349	4,324	120,021
30					4,634	4,324	120,331
31					4,193	4,324	120,200
32					2,963	4,324	118,839
33					1,804	4,324	116,319
34						4,324	111,995
35	2001-02					4,324	107,671
36						4,324	103,347
37						4,324	99,023
38						4,324	94,699
39						4,324	90,375
40						4,324	86,051
41						4,153	81,898
42						4,119	77,779
43						4,090	73,689
44						3,909	69,780
45						3,630	66,150
46						3,533	62,617
47						3,332	59,285
48	2014-15					3,137	56,148
	Total				$ 281,354	$225,206	
	Present value (3⅜% Discount Rate)				$ 154,743	$112,501	

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EXHIBIT XII

CURRENT SCHEDULE OF CONVERSION TO YEAR-ROUND OPERATIONS

FOR THE STATE COLLEGES

	Begin Planning	Conversion From Two Semesters To Three Quarters	Addition of Fourth Quarter Summer Quarter	Addition of Fourth Quarter Fiscal Year
Hayward (Q)	1964-65	-	1965	1964-65
Cal Poly-SLO (Q)	-	-	1966	1966-67
Cal Poly-KV (Q)	-	-	1966	1966-67
Los Angeles*	1964-65	1967-68	1967	1966-67
San Francisco	1966-67	1970-71	1970	1969-70
Humboldt*	1966-67	1967-68	1970	1969-70
San Fernando Valley	1969-70	1971-72	1972	1971-72
Fullerton	1969-70	1971-72	1972	1971-72
Chico	1969-70	1971-72	1972	1971-72
San Jose	1969-70	1971-72	1972	1971-72
Dominguez Hills (Q)	1971-72	-	1972	1971-72
Long Beach	1970-71	1972-73	1972	1971-72
San Bernadino (Q)	1972-73	-	1973	1972-73
Stanislaus*	1973-74	1965-66	1974	1973-74
Fresno	1972-73	1974-75	1974	1973-74
Sonoma	1972-73	1974-75	1974	1973-74
Sacramento	1973-74	1975-76	1975	1974-75
San Diego	1973-74	1975-76	1975	1974-75

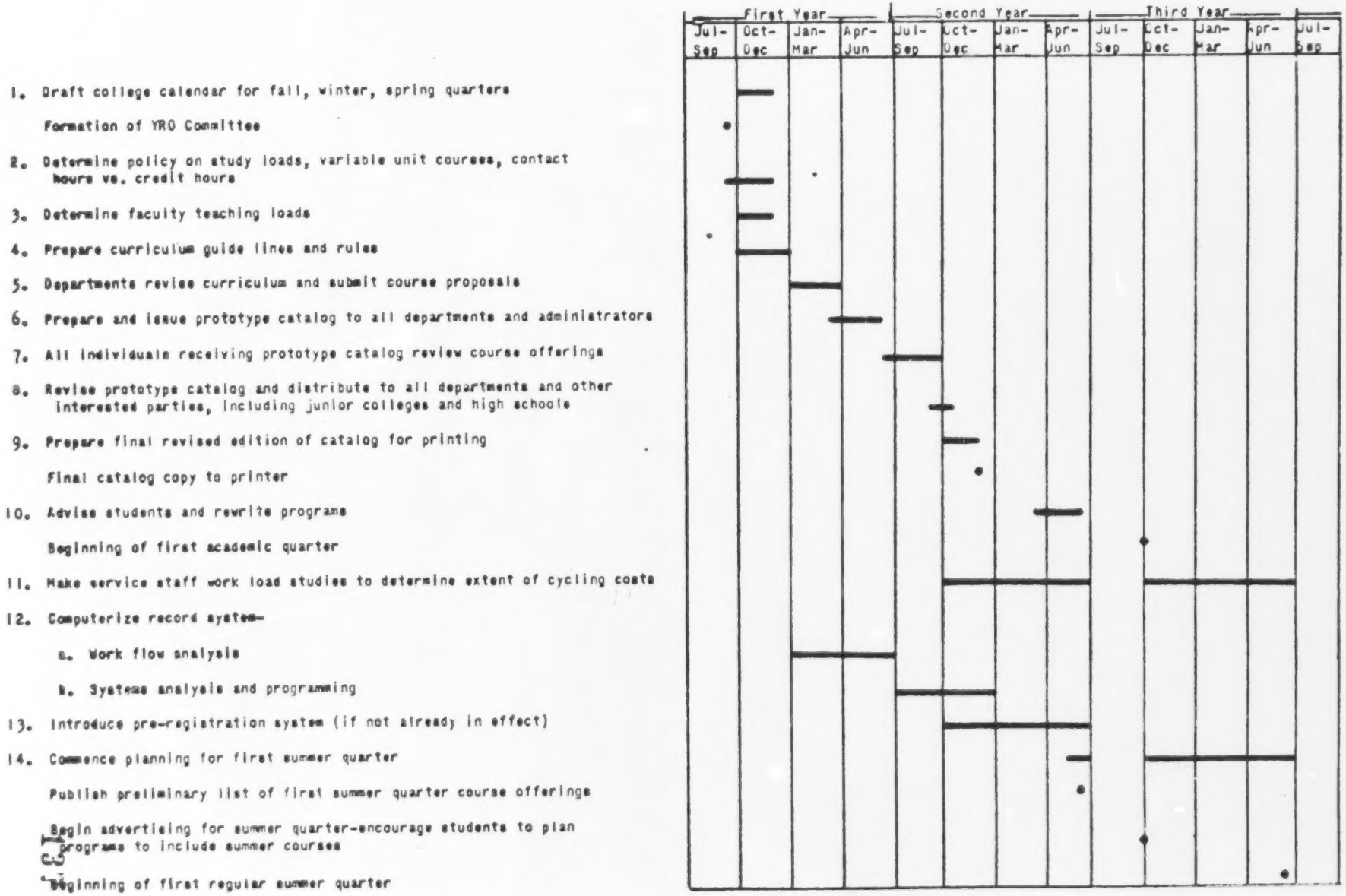
* These colleges have already converted to the quarter system
These colleges began with a three-quarter operation and thus conversion is not necessary.

Note: Based on Trustee policy and Legislative action as of 7-11-68.

EXHIBIT XIII

BEST COPY AVAILABLE

SEQUENCE OF OPERATIONS FOR CONVERSION PLANNING


First Year
Second Year
Third Year
Jul-Sep
Oct-Dec
Jan-Mar
Apr-Jun
Jul-Sep
Oct-Dec
Jan-Mar
Apr-Jun
Jul-Sep
Oct-Dec
Jan-Mar
Apr-Jun
Jul-Sep
1. Draft college calendar for fall, winter, spring quarters
Formation of YRO Committee
2. Determine policy on study loads, variable unit courses, contact hours vs. credit hours
3. Determine faculty teaching loads
4. Prepare curriculum guide lines and rules
5. Departments revise curriculum and submit course proposals
6. Prepare and issue prototype catalog to all departments and administrators
7. All individuals receiving prototype catalog review course offerings
8. Revise prototype catalog and distribute to all departments and other interested parties, including junior colleges and high schools
9. Prepare final revised edition of catalog for printing
Final catalog copy to printer
10. Advise students and rewrite programs
Beginning of first academic quarter
11. Make service staff work load studies to determine extent of cycling costs
12. Computerize record system—
a. Work flow analysis
b. Systems analysis and programming
13. Introduce pre-registration system (if not already in effect)
14. Commence planning for first summer quarter
Publish preliminary list of first summer quarter course offerings
Begin advertising for summer quarter-encourage students to plan programs to include summer courses
Beginning of first regular summer quarter

HUGHES, HOOD, BAILEY & SMART

EXHIBIT XIV

CONVERSION PLANNING COSTS

Budget Year	Berkeley[1]	UCLA[2]	CSCLA
1964-65	$ 42,490	$ 72,091	$ 43,543[4]
1965-66	79,585	76,529	98,722[4]
1966-67	318	0	298,735
	$122,393	$148,620	$441,000[3]

[1]Budget Analyst, University of California, Berkeley.

[2]Chancellor's Office, UCLA.

[3]Budget Officer, CSCLA.

[4]Governor's Budgets, 1966-67 and 1967-68.